

EXAMINATION PAPERS.

Entrance Examination.

1907.

ENGLISH.

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FIRST PAPER.

Head Examiner—N. N. GHOSE, ESQ., F.R.S.L.

Examiners— { BABU JAYGOPAL BANERJEE, M.A.
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BABU NIMAICHANDRA DAS, M.A.

The figures in the margin indicate full marks.

[N.B.—Candidates are reminded that they should try to write, not LONG, but SHORT and CAREFUL answers.]

1. Quote the following :—
 - (a) From *Thou art, O God*, the stanza descriptive of night. 3
 - (b) From Addison's *Ode*, the stanza which speaks of what the heavenly bodies for ever sing. 4
 - (c) From *The Soldier's Dream*, the stanza in which the dreaming soldier swears never to part from his home. 3
 - (d) From *Blessed are they that mourn*, the stanza which comforts the mourner who mourns the loss of his friend. 3

2. Relate or describe briefly :— 12
- (a) The bearing and behaviour of King Harold before and during the battle of Senlac.
- (b) The disposal of the English troops, and the king's speech to them before the battle.
- (c) The stratagem by which the battle was lost to the English.
3. Reproduce the substance of :— 10
- (a) Scott's remarks on the influence of the spirit of chivalry on the followers of the Cross and of the Crescent.
- (b) Southey's remarks on the pain which is felt when the young are first transplanted from home, and on what Nelson felt when returning from India.
4. Narrate briefly in your own words 'the comical adventure of the rings' as told in the story of the *Merchant of Venice*. 6
5. (a) What is the lesson of the life of Francis Horner ? 13
- (b) What was the secret of Franklin's success as a public man ?
- (c) Illustrate the importance of the qualities which, according to your author, form the essence of many characters.
- (d) Explain and illustrate what is meant by principle exercising a protectorate over character.
6. Analyse the following sentence into its component parts, explaining the relation of the parts to one another :— 6
- Nature, which cast his limbs in a mould of uncommon strength, fitted to wear his linked hauberk with as much ease as if the meshes had been formed of cobwebs, had endowed him with a constitution as strong as his limbs, and which bade defiance to almost all changes of climate, as well as to fatigue and privations of every kind.
7. Write brief notes on the following :— 10
- The spirit of Bayard ; the Royal Society ; the fabulous unicorn ; the songs about Brunenburgh and Mahlon ; the Rachels and Rebeccas of Scripture ; the principle of ride and tie ; the wars of the Fronde ; a young blood ; prisoners on parole ; the brothers Cheeryble.
8. (a) What kinds of impurities is water liable to, and what diseases 12 are due to the presence of these impurities in drinking-water ?
- (b) Describe some of the effects of the accumulation of dust and refuse matter in and near dwelling-house and in the streets.
9. Explain the following :— 26
- (a) Its refreshing presence was acknowledged by a carpet of velvet verdure.
- (b) A gift more precious than ever was bestowed on a favoured princess by beneficent fairy.
- (c) Habit binds us with a chain of iron.
- (d) The beginning holds within it the end.
- (e) Truth is the summit of being.
- (f) The tyrant is but a slave turned inside out.
- (g) When the close of pleasure's day
To gloom hath near consign'd us.
- (h) The ancient graves and the fallen fanes
Are veiled with wreaths on Italian plains.
- (i) I have sent through the woodpath a glowing sigh
And called out each voice of the deep blue sky.
- (j) There were voices that rang through the sapphire sky,
And had not a sound of mortality.
- (k) Our bugles sang truce—for the night-cloud had lowered,
And the sentinel stars set their watch in the sky.
- (l) This fiery mass
Of living valour, rolling on the foe,
———shall moulder cold and low.

- (m) Fitly attuned to all that gratitude
Breathes out from floor or couch.
10. Parse all the words in 9 (m).

ENGLISH.

SECOND PAPER.

Head Examiner—N. N. GHOSE, ESQ., F.R.S.L.

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|------------|---|-------------------------------|
| Examiners— | { | MRS. NIRMALABALA SOM, M.A. |
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PART I (a).

BENGALI.

The figures in the margin indicate full marks.

Translate into English :—

১.

পাটলিপুত্র নিবাসী কোন ব্রাহ্মণের ইন্দ্রদত্ত নামে একমাত্র পুত্র ছিল। সে তাঁহার পিতৃকর্তৃক সর্বদা ত্রিহস্তত হইয়াও বাল্যে বিদ্যা শিক্ষা করিত না। এইরূপে অলস ও মুর্থ হইয়া সে দেখিল যে, সকল লোকেই তাহাকে অবজ্ঞা করে; এবং যীশু মতাত আদরণে অন্ততঃ হইয়া অবশেষে তপস্যাধারা অভ্যস্তিত জ্ঞানলাভের আশায় গঙ্গাতীরে গমন করিল। যখন সে এইরূপে উগ্র তপস্যায় নিযুক্ত আছে, তখন ইন্দ্র তাহাকে সাবান্নয়ে অবলোকন করিয়া এই বৃথা তপস্করণ হইতে নিবৃত্ত করিবার জন্য ব্রাহ্মণবেশে তাহার নিকট উপস্থিত হইলেন। তাহার দৃষ্টিপথে উপস্থিত হইয়া তিনি মুষ্টি মুষ্টি পণিমিত বানুকা উত্তোলন করিয়া নদীর জলে নিক্ষেপ করিতে লাগিলেন। ইন্দ্রদত্ত কিয়ৎক্ষণ তাহার দিকে দৃষ্টিপাত করিয়া আর কতৃৎল সংবরণ করিতে পারিল না এবং যৌন ভয় করিয়া তিনি কৈন ঐরূপ অন্তত কার্য্য করিতেছেন,

তাহার কারণ জিজ্ঞাসা করিল। ইল্ল প্রথমে তাহার প্রতি লক্ষ্য করিলেন না, কিন্তু সে নির্বাক্ মহকাবে বারম্বার তাহার প্রশ্নের আবৃত্তি করার উত্তর করিলেন, “আমি-মল্লুয়া ও পশুর পারের নিমিত্ত স্থলার উপরে সেতু নির্মাণ করিতেছি”। তাহাতে ইল্লদত্ত হাসিয়া বলিল, “তুমি নিবোধ, বালুকা নিশ্চয়ই স্রোতে দূরে নৌত হইবে, উহা দ্বারা কেমন করিয়া নদীর উপর সেতু নির্মাণ করা যাইবে?”। ইল্ল বলিলেন “যদি তুমি এই সত্য অবগত থাক, তাহী হইলে তুমি কেন অবায়ন ও গুরু-পদেশ শ্রবণ বাতীত ব্রত ও উপবাস দ্বারা জ্ঞান লাভের চেষ্টা করিতেছ? একথা নিশ্চিত যে যদি অবায়ন বাতীত বিদ্যার্জন সম্ভব হয়, তাহা হইলে অক্ষর ব্যবহার বাতীত লিখন কার্য সম্পন্ন হইতে পারে ও ব্রহ্মের কর্তৃত্ব বাতীত একজন নিরবচ্ছিন্ন চিত্তকর কর্তৃক তুলিকা ও বর্ণভাণ্ড দ্বারা আকাশ সৃষ্ট হইতে পারিত। যদি বিদ্যার্জন ঐ রূপে সম্ভব হইত, তাহা হইলে কেহই এই পৃথিবীতে একেবারেই অধ্যয়নের কষ্ট স্বীকার করিত না”। ইল্লদত্ত এই কথাগুলি চিন্তা করিয়া এবং উহা-এর মাধ্যম্য হৃদয়ঙ্গম করিয়া স্মীর আত্মনিগ্রহ ব্যাপার বন্ধ করিয়া মিলি এবং ব্রত ও উপবাস অপেক্ষা উৎকৃষ্টতর উপায়ে জ্ঞান লাভ করিতে কৃতশঙ্কর হইয়া গৃহে গমন করিল।

B.

গঙ্গাতীরস্থ কোন নগরে হরিশ্যামী নামে এক তীর্থপর্যটনকারী সন্ন্যাসী বাস করিতেন। এক দিন নগরবাসীদিগের মধ্যে তাহার গুণা-মহিমা এক দ্রুত দূর হইতে তাঁগকে ভিক্ষার্থ বহির্গত হইতে দেখিয়া বাহারা নিকটে দাঁড়াইয়া ছিল, তাহাদিগকে বলিল, “তোমরা ঐ ব্যক্তি কিরূপে তও সন্ন্যাসী তাহা অবগত আছ কি? ইনিই এই নগরের অনেকগুলি শিশু ভক্ষণ করিয়াছেন”। তাহার কথা শুনিয়া নিকটে দণ্ডায়মান ব্যক্তিগণের মধ্যে তাহার জ্ঞান দ্রুত এক জন বলিয়া উঠিল, “ইহা সত্য কথা, আমি ভুল লোককেও ঐরূপ বলিতে শুনিয়াছি”। ইহা সমর্থন করিয়া তৃতীয় ব্যক্তি বলিল, “এই রূপই প্রকৃত ঘটনা”। দুরাশ্রাদিগের দীর্ঘ সিংখোক্তি পরম্পরা সাধু ও নিরপরাধ ব্যক্তিদিগের উপর কলঙ্ক অধিত করে। তখন ঐ নগরের ব্রাহ্মণ সমূহ তাহাদিগের শিশুসন্তানগণও ঐ রূপে বিনষ্ট হইবে, এই ভয়ে সমবেত হইয়া তাঁহাকে নগর হইতে বহিষ্কৃত করিয়া দিবার বিষয়ে পরামর্শ করিলেন। তাহাদের অভিপ্রায়ের কথা শ্রবণ করিয়া হরিশ্যামী তাহাদিগকে বলিলেন, “এ কি ভ্রম? আমি কতগুলি শিশু ভক্ষণ করিয়াছি ও কাহাদের শিশু ভক্ষণ করিয়াছি তাহা আপনারা স্থির করিতেছেন না কেন?” ইহা শুনিয়া

ব্রাহ্মণ ও অস্পৃশ্য নাগরিকেরা আপনাদের মধ্যে স্ব স্ব অভিজ্ঞতার তুলনা করিতে লাগিলেন এবং দেখিলেন যে তাঁহাদের সকলেরই সমস্ত শিশুগণ্তান জীবিত ও সুস্থ আছে। এবং বনিক ও ব্রাহ্মণগণ এক বাক্যে বলিলেন, “হায়, আমরা মুঢ়তা বশতঃ একত্ব সাধুর প্রতি অবিচার করিয়াছি। আমাদের শিশুগণ সকলেই জীবিত আছে, সুতরাং ইনি কাহার শিশু ভক্ষণ করিয়াছেন?” তৎক্ষণে তাঁহারা তাঁহাকে ক্রোধ পরিত্যাগ করিয়া তাঁহাদের সহিত অবস্থান করিতে অস্বরোধ করিলেন।

HINDI.

The figures in the margin indicate full marks.

Translate into English :—

12

पाठलीपुत्र ~~में~~ रहनेवाले किसी ब्राह्मण को इन्द्रदत्त नाम का एक एकलौता बेटा था जो लड़कपन में बाप की बारम्बार झिड़की खाते रहने पर भी शास्त्रों को न सीखता। इस प्रकार आलस्य और अज्ञान में दिन बिताते हुए जब वह बड़ा हुआ उस ने अपने को सब लोगों से तिरस्कृत होते देखा और अपनी करनी पर बहुत दुःखी हो वह शीत में इस आशा से गङ्गाजी के तट पर जा बैठा कि तपस्या करने से कशानित में वाञ्छित ज्ञान लाभ कर सऊं। इस प्रकार जब वह अपने शरीर को तपने में लगा था इन्द्र जिन को उसे देख आश्चर्य हुआ था ब्राह्मण का रूप धरे उस को उस निरर्थक तपस्या से निवृत्त करने के लिये उसके पास आये और उस की दृष्टि में पढ़ने पर मुट्ठी भर भर बालू चठाने और नदी के जल में फेंकने लगे। कुछ काल ठक उनकी और देखते रहने के पश्चात् इन्द्रदत्त अपना कौतूहल न रोक सका और मोन भंगकर उन से सेवा विचित्र काम करने का कारण पूछने लगा। इन्द्र ने पहले उसकी और ध्यान नहीं दिया पर उसके बारम्बार आपह से पूछने पर उत्तर दिया कि मैं मनुष्य और पशुओं के पार होने के लिये गङ्गाजी पर पुल बाँध रहा हूँ। इस पर इन्द्रदत्त ने हँसकर कहा, ये मूर्ख! बालू से जो निश्चय है कि धारा में बह जायगी नदी पर कैसे पुल बाँधा जा सकता है? इन्द्र ने उत्तर

दिया यदि तुम जानते हो कि यह सत्य है तो फिर तुम क्यों इन व्रत और उपवासों से विना पके और पाँठ घुने विद्योपार्जन की चेष्टा कर रहे हो ? यदि पके विना विद्या उपार्जित हो सकती है तो निश्चय है कि अक्षरों की व्यवहार न कर लिखना भी हो सकता है और यह भी हो सकता है कि ब्रम्हा का हाथ लगे विना किसी निरे चित्ते ने एक कूँची और एक रंग का पात्र लेके आकाश बना लिया हो । यदि विद्या इस प्रकार आ सकती तो संसार में कोई उसके पढ़ने का श्रम न उठाता । इन्द्रदत्त ने इन बातों पर विचार कर और उन को ठीक देख अपने शरीर को क्षीण देना छोड़ दिया और व्रत उपवास की अपेक्षा अधिक उत्तम उपायों से विद्योपार्जन करना मन में ठान, वह घर चला आया ।

B.

गङ्गाजी के तट पर किसी नगर में हरिश्चामी नामक एक साधु रहते थे जो तीर्थों की यात्रा किया करते थे । एक दिन उस नगर के रहनेवालों में से एक दुष्ट मनुष्य जो उनके सद्गुणों को नहीं सह सकता था उनको भिक्षा के लिये जाते हुए दूर से देख अपने पास खड़े हुए लोगों से कहने लगा “क्या तुम जानते हो यह कैसा कपटी साधु है । यह वही है जो इस नगर के बहुत से बच्चों को खा गया है” । वहाँ जो लोग खड़े थे उन में से एक मनुष्य जो उसी के ऐसा दुष्ट था उसकी बात सुनकर बोला “सच है, मैं ने और लोगों को भी ऐसा ही कहते सुना है” एक तीसरे मनुष्य ने उसकी बात सकारते हुए कहा “बात तो ऐसी ही है” पापी मनुष्यों को झूठी बातों की लड़वाँध देने से सज्जन और निष्ठाप व्यक्ति के शील में भी दोष लग जाता है । इस पर उस नगर के ब्राह्मण इस भय से कि हम लोगों को भी बच्चे इसी प्रकार नष्ट हो जायेंगे एकत्र हो उनका नगर से निकाल देने का विचार करने लगे । उनका यह अभिप्राय सुन हरिश्चामी ने उन से कहा कि यह कैसा अम है ? तुम लोग इस बात का क्यों नहीं खोज लगाते कि मैं ने कितने बच्चे खाये हैं और किसके ? यह सुन ब्राह्मण और नगर के और लोग अपना अपना हिस्सा मिलाने लगे ; उन्होंने ने देखा कि सभी

کو سمجھ جاتے اور ابلے چنگے ہیں۔ اس پر تیسرا اور چارواں دونوں ہی ایک دوسرے سے کہنے لگے، ہاں کیڑا۔ انہوں نے سچائی سے ہم لوگوں نے ایک باغیچہ میں ایک باغیچہ بنایا۔ ہم سب کو تو سبھی سمجھ جاتے ہیں مگر تین کو سمجھ نہ آتا ہے؟ اس پر ان لوگوں نے ان سے یہ تینوں کو کہی کہ اگر آپ اپنا کڑوا دھار کر کے اور ہمارے ساتھ رہیں۔

URDU.

The figures in the margin indicate full marks.

Translate into English:—

A.

14 • پانچویں سو کے رہنے والے کسی برہمن کا ایکوتا بیٹا اندرت نامی تھا۔ باوجودیکہ اس کا باپ برابر نصیحت کرتا رہا۔ پر اس نے جوانی میں علوم نہ سیکھے۔ اسی طرح کافلی اور جہالت میں وہ بڑا ہوا اور لوگوں کو اپنی طرف سے متذکر پایا۔ تب اپنی گزشتہ عادتوں پر بہت مناسف ہوا۔ اور آخر کار گنگا کے کنارے زہد و ریاضت کر کے علوم مطلوبہ حاصل کرنے کی امید پر چلا بیٹھا۔ جبکہ اس طرز پر وہ بدن کو سختی سے گھلانے میں مشغول تھا۔ اندر نے اس کو تعجب سے دیکھا۔ اور برہمن کے بھیس میں اس کے پاس آیا کہ اس کو ان بیفائدہ ریاضتوں سے باز رکھے۔ اس کی نظر کے سامنے آکر وہ مٹی میں بالو اٹھا کر دریا کے پانی میں پھینک لگا۔ اندرت تھوڑی دیر تک اس کی طرف دیکھتا رہا۔ مگر وہ اس امر کے دریافت کی خواہش کو زیادہ دیر تک ضبط نہ کر سکا۔ اپنی خموشی کو چھوڑ اس سے پوچھا کہ اس عجیب حرکت کا کیا مطلب ہے۔ پہلے تو اندر نے اس کی طرف توجہ نہ کی۔ لیکن آگے اصرار کے ساتھ بار بار سوال کرتے ہوئے جواب دیا۔ ”آدمیوں اور

جانوروں کے پار اترنے کے لئے گفگا کے اوپر میں پل بنا رہا ہوں۔ اس پر اندردت نے ہنسبکر کہا۔ اے بے وقوف۔ ندی پر بالو سے پل کیونکر بن سکتا ہے۔ وہ تو ضرور دھارے کے ساتھ بہہ جایگا۔ اندر نے جواب دیا۔ ”اگر تم اس اصلیت کو جاننے ہو تو منت مان کر اور روزے رکھ کر بغیر پڑھے اور لکچر سننے علم حاصل کرنے کی کوشش کیوں کرتے ہو؟ البتہ اگر علم بغیر پڑھے حاصل ہو جاسکتا۔ تو لکھنا بھی بغیر استعمال حروف کے ہو سکتا اور آسمان کو بھی بغیر برہما کے ہاتھ لگائے فقط ایک نقاش برش اور رنگ کی پیالی سے پیدا کر لیتا۔ اگر علم اسی طرح حاصل ہو جانا تو اس جہان میں کوئی بھی پڑھنے کی تعذیب کو مطلقاً گوارا نہ کرنا۔ ان الفاظ پر غور کر کے اور یہ دیکھ کر کہ وہ صحیح ہیں اندردت نے نفس کشی چھوڑ دیا۔ اور یہ ارادہ کر کے گھر کو روانہ ہوا کہ علم کو کسی دوسرے طریقے سے حاصل کرنا چاہئے جو منت ماننے اور فاقہ کشی سے بہتر ہو۔

B.

ایک شہر میں گفگا کے کنارے ایک جوگی ہری ہوامی نام رہتا تھا۔ اور وہ متبرک مقامات کی زیارت کیا کرتا تھا۔ باشندوں میں سے ایک بدکردار آدمی جو اُسکی خوبیوں کو گوارا نہیں کر سکتا تھا ایک روز اُسکو دور سے بھیک مانگنے کو جاتے ہوئے دیکھ کر اُن لوگوں سے جو اُس پاس کھڑے تھے کہنے لگا۔ ”تم جانتے ہو وہ کیسا ریباکار جوگیہ ہے؟۔ یہ وہی ہے جس نے بہت سے لڑکوں کو اس شہر میں کھا لیا ہے۔ اُن لوگوں میں سے جو نزدیک کھڑے تھے ایک آدمی جو اُسکی کے ایسا بد معاش تھا یہ اسفکر بولا۔ ”یہ سچ ہے۔ میں نے

دوسرے لوگوں کو بھی اسی طرح کہتے سنا ہے۔ “ - تیسرے نے اُسکی تائید میں کہا۔ ” واقعہ ایسا ہی ہے “ * بد معاشوں کے طویل مسلسل چہرے احوال اچھڑے اور معصوم لوگوں پر بدنامی لگا دیتے ہیں۔ تب اُس شہر کے برہمن لوگ یہہ تَر کر کہ اُنکے لڑکے بھی اُسی طرح مار ڈالے نہ جائیں جمع ہوئے اور اُسکے شہر بدر کرنے کی صلاح کرنے لگے۔ اُن کے ارادے کا حال سنکر ہری سواہی نے اُن سے کہا۔ ” یہہ کیسی بد گمانی ہے ؟ - تم یہہ کیوں نہیں تحقیق کرتے کہ میں نے کتنے لڑکے بھائے ہیں۔ اور کس کس کے ؟ “ یہہ سنکر برہمنوں اور دوسرے شہریوں نے آپس میں باتوں کا موازنہ کرنا شروع کیا۔ معلوم ہوا کہ اُن سب کے بالکل لڑکے زیادہ اور بخیریت تھیں۔ اور سوداگروں اور برہمنوں نے ہمزبان ہوکر کہا۔ ” افسوس۔ اپنی بے وقوفی سے ہم نے ایک متبرک آدمی کے حق میں بے انصافی کی ہے۔ ہمارے لڑکے سب زندہ ہیں۔ بھلا اس نے کیونکر کسی کے لڑکے کو کھایا ہوگا ؟ “ - بعد ازاں اُن لوگوں نے اُس سے التجا کی کہ اپنے غصہ کو دفع کرے اور اُنکے ساتھ رہے * .

URIYA.

The figures in the margin indicate full marks.

Translate into English :—

A.

ପାଟଲିପୁତ୍ର-ନିବାସୀ କୌଣସି ବ୍ରାହ୍ମଣର ଇନ୍ଦ୍ରଦତ୍ତ-ନାମକ ଗୋଟିଏ ମାଣ ପୁଅ ଥିଲା । ଇନ୍ଦ୍ରଦତ୍ତ ପିତୃବର୍ତ୍ତକ ଅନବରତ ଅବୁଶାଦିତ ହୋଇଥିଲେହେଁ, ସେ ବାଲ୍ୟକାଳରେ ବିଦ୍ୟା-ଶିକ୍ଷା ବିଷୟରେ ମନ ଦେଇ

ନ ଥିଲା । ଏହିପରି ଅଳସୁଆ ଓ ନିର୍ଜ୍ଞ ହୋଇ ବସି, ସେ ଦେଖିଲା ଯେ ସମସ୍ତେ ତାହାକୁ ଘୃଣା କରୁଅଛନ୍ତି ଏବଂ ତାହାର ପୂର୍ବ ଅଚରଣ ଲାଗି ଅତି ଦୁଃଖିତ ହୋଇ କଠୋର ତପସ୍ୟା ଦ୍ଵାରା ଅଭ୍ୟାସ ବିଦ୍ୟାଳୟ କରିବା ଅଣ ରେ ସେ ଅବଶେଷରେ ଗଙ୍ଗାତଟ ଅଶ୍ରୁ କଲା । ସେ ଏହି କଠୋର ଶରୀର-କ୍ଳେଶର ତପସ୍ୟାରେ ରତ ଥିବା ସମୟରେ, ଇନ୍ଦ୍ର ବିଷ୍ଣୁରେ ତାହାକୁ ଦେଖି ଏହି ବୃଥା ତପସ୍ୟାରୁ ତାହାକୁ ନିବର୍ତ୍ତକ୍ତା ଉଦ୍ଦେଶ୍ୟରେ ଗୋଟିଏ ବୃହତ୍‌ରୂପ ଧରି ତାହା ନିକଟକୁ ଆସିଲେ । ତାହାର ଦୃଷ୍ଟିପଥକୁ ଆସିଲା, ଇନ୍ଦ୍ର ମୁଠା ମୁଠା ବାଲି ନେଇ ନିଜାଳରେ ସେ ସବୁ ନିକ୍ଷେପ କରିବାକୁ ଲାଗିଲା । ଇନ୍ଦ୍ରଦତ୍ତ କିଛି କାଳ ତାଙ୍କ ଆଡ଼କୁ ଅନାଇଲା ପରେ ଆଉ କୌତୁହଳ ନିରୂପ କରି ପାରିଲା ନାହିଁ । ସେ ମୌନ ପରିହର କରି ପଶୁଥିଲା, ଭୂମ୍ଭୂ କାହିଁକି ଏପରି ଅଭ୍ୟାସ ନିର୍ଦ୍ଧାରଣ କରୁଅଛନ୍ତି ? ଇନ୍ଦ୍ର ପ୍ରଥମେ ତାହାର କଥାକୁ ଜାଣି ଦେଖିଲା ନାହିଁ, କିନ୍ତୁ ଅନ୍ୟ ଜଣକ ବାମ୍ଫୋର ଅଭିନିବନ୍ଧରେ ପଶୁଥିବାରୁ, ସେ ଉତ୍ତର କଲେ, “ମନୁଷ୍ୟ ଓ ପଶୁମାନଙ୍କ ଯା ତାହା ଯାହା ମୁଁ ଗଙ୍ଗା ଉପରେ ଗୋଟିଏ ସେତୁ ନିର୍ମାଣ କରୁଅଛି ।” ତହିଁ ଇନ୍ଦ୍ରଦତ୍ତ ଦୃଷ୍ଟି କହିଲା, “ଆରେ ନିକୋଥ, ଯେଉଁ ବାଲି ସ୍ରୋତରେ ନିଶ୍ଚୟ ବହୁଥିବ, ତଦ୍ଵାରା ନଦୀ ଉପରେ କିପରି ସେତୁ ନିର୍ମାଣ ହେବ ?” ଇନ୍ଦ୍ର ଉତ୍ତର କଲେ, “ଭୂମ୍ଭୂ ଯଦି ଏ ତଥ୍ୟ ଜାଣି, ତେବେ କାହିଁକି ଅଧ୍ୟାତ୍ମିକ ନ କରି ଉପଦେଶ ଶ୍ରବଣ ନ କରି ବ୍ରତ ଓ ଉପବାସ ଦ୍ଵାରା ଜ୍ଞାନ-ଜନର ଚେଷ୍ଟା କରୁଅଛନ୍ତି ? ଅଥଚ ଯୁବ ବିନା ଯଦି ବିଦ୍ୟା ଅର୍ଜିତ ହୋଇ ପାରେ, ତାହା ହେଲେ ଅକ୍ଷୟ-ବ୍ୟବହାର ବିନା ଲେଖିବା କାର୍ଯ୍ୟ ମଧ୍ୟ ହୋଇ ପାରେ ଏବଂ ବୃହତ୍‌ହସ୍ତବିନା ଜଣେ କେଲେ ଚର୍ଚ୍ଚିକାର ଦ୍ଵାରା ଭୁଲିବା ଓ ଲେଖିବାର ସାହାଯ୍ୟରେ ଆକାଶ-ମଧ୍ୟ ନିର୍ମିତ ହୋଇ ପାରେ । ବିଦ୍ୟା ଯଦି ଏହିପରି ଲବ୍ଧ ହୋଇ ପାରିଲା, ତାହା ହେଲେ ଏ ସଂସାରରେ ଅଧ୍ୟାତ୍ମିକ କରିବା ଯାହିଁ କେହି କିଛି ମାତ୍ର ଶ୍ରମସ୍ଵୀକାର କରିନ୍ତି ନାହିଁ ।” ଇନ୍ଦ୍ରଦତ୍ତ ଏହି କଥା ଶୁଣି ଅନୁଧ୍ୟାନ କରି, ତାହା ସତ୍ୟ ଥିବାର ଜାଣି କଠୋର ତପସ୍ୟା ତ୍ୟାଗ କଲେ ଏବଂ ବୃହତ୍‌ରୂପ ଆପେକ୍ଷା ପ୍ରଶସ୍ତତର ଉପାୟ ଦ୍ଵାରା ଜ୍ଞାନ ଅର୍ଜିବା ପାଇଁ କୃତସଂକଳ୍ପ ହୋଇ ଘରକୁ ଗଲେ ।

B.

12

ଘାଟି-ସ୍ଥାନମାନଙ୍କର ଦର୍ଶନରେ ନୟାକୁ ଦୃଢ଼ସ୍ଥାମୀ ନାମକ ଜଣେ
 ସନ୍ନ୍ୟାସୀ ଏକଦା ଗଙ୍ଗା ଚଟକତ୍ରୀ କୌଣସି ନଗରରେ ବାସ କରୁଥିଲେ ।
 ଦିନେ ନଗରବାସିନୀଙ୍କ ମଧ୍ୟରୁ ଜଣେ ଦୃଢ଼ ଲୋକ ନିଜ ଦେଷ-କୁଣ୍ଡି
 ହେତୁରୁ ତାହାଙ୍କର ସମ୍ମୁଖରେ ସହ ନ ପାରି, ତାହାଙ୍କୁ ଉକ୍ଷା କରିବା
 ପାଇଁ ଯାଉ ଥିବାର ଦୂରରୁ ଦେଖି ନିକଟରେ ଛୁଟି ଦେଇ ଥିବା
 ଲୋକମାନଙ୍କୁ କହିଲା “ସେ ଲୋକଟା କିପରି ରାତ୍ର ଉପସ୍ଥାପିତ ହୁଏମାନେ
 କି ଜାଣ? ସେ ଏ ନଗରର ଅନେକ ଘିଲକୁ ଖାଇ ପକାଇଲଣି ।” ସେ
 କଥା ଶୁଣି ପାର୍ଶ୍ଵସ୍ଥ ତାହାରିପରି ଜଣେ ଦୁର୍ଜନ କହିଲା, “ହଁ ଏକଥା
 ସତ୍ୟ, ମୁଁ ଅନ୍ୟ ଅନେକ ଲୋକେ ଏପରି କହୁଥିବାର ଶୁଣିଅଛି ।” ତତ୍ପରେ
 ଜଣେ ସେ କଥାକୁ ଦୃଢ଼ରୂପେ ସମର୍ଥନ କରି କହିଲା “ଏହା ସତ୍ୟ
 ଘଟଣା ଅଟେ” । ଖବର ଲୋକମାନଙ୍କର ବହୁ ମିଥ୍ୟା-କଥନ ଦ୍ଵାରା
 ନିରାପତ୍ତ ଓ ସାଧୁ ବ୍ୟକ୍ତିମାନେ ନିନ୍ଦାଭଜନ ହୁଅନ୍ତି । ତଦନନ୍ତର
 ସେ ନଗରବାସୀ ବ୍ରାହ୍ମଣମାନେ, କାଳେ ତାଙ୍କ ଘିଲମାନେ ସେହିପରି
 ବିନାଶ ହେବେ ଏହି ଶଙ୍କା କରି, ସେହି ନଗରରୁ ସନ୍ନ୍ୟାସୀଙ୍କୁ ନିବାସିତ
 କରିବା ପାଇଁ ସମ୍ମେଳିତ ହୋଇ ମନୁଷ୍ୟା କରିବାକୁ ଲାଗିଲେ । ସେମାନଙ୍କର
 ଅଭିପ୍ରାୟ ବିଷୟ ଶୁଣି, ଦୃଢ଼ସ୍ଥାମୀ ସେମାନଙ୍କୁ କହିଲେ, “ଏକ ଭ୍ରାତୃ ?
 ମୁଁ କାହାର କେତେଟା ଘିଲ ଖାଇଅଛି, ତୁମ୍ଭେମାନେ ଅନୁସନ୍ଧାନ କରି
 ବୁଝି ନାହିଁ କାହିଁକି? ଏହା ଶୁଣି ବ୍ରାହ୍ମଣମାନେ ଓ ଅନ୍ୟ ଲୋକେ
 ପରସ୍ପର ମଧ୍ୟରେ ଅନୁସନ୍ଧାନ କରିବାକୁ ଲାଗିଲେ ଏବଂ ବୁଝି ପାରିଲେ
 ଯେ ସମସ୍ତଙ୍କ ଘିଲମାନେ ଖାଦ୍ୟ ଓ ସମ୍ପଦ ଅଛନ୍ତି । ତହିଁ ବଣିକ୍ ଓ
 ବ୍ରାହ୍ମଣମାନେ ସମସ୍ତେ କହିଲେ, “ହା ଥକ୍! ଅମ୍ଭମାନଙ୍କ ମୂଢ଼ତା ଦ୍ଵାରା,
 ଅମ୍ଭେମାନେ ଜଣେ ସାଧୁ ପତି ଅନ୍ୟାୟ କରିଅଛୁ । ଅମ୍ଭମାନଙ୍କ ସବୁ
 ଘିଲମାନେ ଖାଦ୍ୟ ଅଛନ୍ତି, ତେବେ ସେ କାହାର ଘିଲକୁ ଖାଇଅଛି?”
 ତଦନନ୍ତର ସେମାନେ ତାହାଙ୍କୁ କ୍ରୋଧ ଶାନ୍ତ କରିବା ପାଇଁ ଏକ
 ସେମାନଙ୍କ ମଧ୍ୟରେ ବାସ କରିବା ପାଇଁ ବିନିୟୋଜନ ପ୍ରାର୍ଥନା କଲେ ।

MAHRATHI.

The figures in the margin indicate full marks.

Translate into English :—

A.

14

पाठलीपुत्र येथें एक ब्राम्हण राहत असे ; त्याला एकुलता एक एक मुलगा होता, त्याचें नांव इंद्रदत्त होतें बापानें शास्त्रांचा अभ्यास करण्या विषयी त्याला सतत उपदेश करावा, परंतु लहानपणीं त्यानें तें ऐकिलें नाहीं . या प्रमाणें आळसांत आणि अज्ञानांत तो लहानाचा मोठा आला ; तेव्हां त्यानें पाहिलें कीं सर्व लोक आपल्याला तुच्छ लेखतात . या मुलें आपल्या मागील वर्तनाबद्दल त्याला फार खेद होऊन तो गंगेच्या काठी जाऊन तप करीत बसला . त्याला अशी उमेद होती कीं असें केल्यानें आपल्याला इंद्र ज्ञानाची प्राप्ति होईल या प्रमाणें तो उग्र वेदवृद्ध करीत असेतां इंद्रानें त्याला पाहिलें आणि त्याला आश्चर्य वाटलें . व त्याला या व्यर्थ कष्टां पासून परावृत्त करण्याच्या हेतूनें तो ब्राम्हणाच्या वेषानें त्याचा पाशीं आला . नंतर त्याला दिसे इतक्या अंतरावर उभा राहून मूठ मूठ बाळू घेऊन नदीच्या पाण्यांत फेकण्याचा त्यानें क्रम सुरू केला . इंद्रदत्त कांहीं वेळ त्याच्या कडे पहात राहिला, तेव्हां त्याची जिज्ञासा अनावर होऊन त्याने त्याच्याशीं बोलण्यास आरंभ केला आणि त्याला विचारले तूं असा विचित्रपणा कां करीत आहेस ? इंद्रानें प्रथमतः त्याच्या कडे लक्षण दिलें नाहीं, परंतु त्याने पुनः पुनः एकसारखा जेव्हां तोच तो प्रश्न केला तेव्हां त्याने उत्तर दिलें कीं माण सांना आणि जनावरांना जाण्य करितां मी, गंगेवर पूल करीत आहे . तेव्हां इंद्रदत्त हसून म्हणाला, अरे मूर्खा वाळूनें नदी वर पूल कसा बांधला जाईला ? ती तर, पाण्याच्या लोठा बरोबर खचित वाहून जाणार . इंद्रानें उत्तर दिलें, ही गोष्ट जर तुला कळते तर अध्ययन आणि अवय यां बांधून नुसत्या नवसांनीं आणि उपवासांनीं ज्ञान प्राप्त करून घेण्याच्या तूं कां भरीं पडला आहेस ? खरोखरच जर अभ्यासा बांधून विद्या प्राप्त होण्या जोगी असेल, तर अक्षरां बांधून लिहितां येण्यास काय हरकत आहे, अथवा ब्रम्हदेवाचा हात लागल्या बांधून

नुसत्या चिंतायां कुंवा आशि रंगाची वाढी घेऊन आकाश निर्माण केलें असें म्हटल्यास काय बाध आहे ? जर अशा रीतीनें विद्या प्राप्त होण्या सारखी अशिल, तर या जगांत काणी ही मुळीं अभ्यासाची इगडगव करणार नाही. इंद्रुत्तानें हे शब्द ऐकून त्यांत तथ्य आहे असें विचारा अंतीं त्याला दिसून आलें; तेव्हां स्वतःच्या वेडाला दंड करण्याचें सोडून देऊन तो घरीं गेला आणि नवस आणि उपवास यां पेंतां चांगल्या उपायांनीं ज्ञान प्राप्त करून घेण्याचा त्यानें निश्चय केला .

B.

गंगेच्या काठीं एका शहरांत हरिश्चामी नांवाचा एक साधु रहात असे, तो पुण्यक्षेत्रांची यात्रा करीत असे, तेथील रहवाशांपेकीं एका दुष्टाला त्याचें सदाचरण सहन झालें नाहीं आणि एके दिवशीं दुष्टान तो भित्तेला जाऊन आहे असें पाहून जवळच उभे असलेल्या लोकांना त्यानें म्हटलें, तो साधु कसा भानभावी आहे हें तुम्हांला माहीत आहे काय ? या शहरांतील पुष्कळ मुलें त्यानें खाल्हीं आहेत. त्याच्या सारखाच दुसरा एक दुष्ट मनुष्य जवळच उभा होता तो म्हणाला, हें खरें आहे, आणखी दुसऱ्या लोकांना असेंच म्हणतांना मीं ऐकिलें आहे . तिथल्यानें त्यां गोष्टीला पुष्टीकरण दिलें, तो म्हणाला अशी गोष्ट आहे खरी . दुर्जनानें एका मागून एक पुष्कळ खोक्या कंड्या पिकविल्यानें सज्जन आणि निरुपद्रवी लोकांच्या ही नांवाला कलक लागतो . असें झाल्यावर त्या शहरांतील ब्राम्हणांना आपल्या मुनांचा ही असाच घात होईल अशी धप्पली पडली आणि त्यांनीं सभा भगवून त्याला शहरांतून हाकून देण्या विषयीं खलबत केली . त्यांचा विचार हरिश्चामीच्या कानावर गेला तेव्हां तो त्यांना म्हणाला; कोण हा अस ? मीं कोणा कोणाचीं किती मुलें खाल्हीं याचा तुम्ही तपास कां लावीत नाही ? हे ऐकून त्या शहरांतील ब्राम्हणांनीं आणि इतर रहवाशांनीं आपसांत तपशील जोडण्यास सुरवात केली तेव्हां त्यांना आढळून आलें कीं आपल्या सर्वांचीं सर्व मुले जिवंत आणि चांगलीं आहेत . असें झाल्यावर ब्राम्हण आणि व्यापारी दोघे ही म्हणाले, अरेरे, आपण सूर्खपणानें त्या पुण्य पुरुषाशीं अन्यायाचें वर्तन केलें . आपलीं मुलें सर्व जिवंत आहेत, असें आहे तर

12

त्यानें मुलें तरी कोणाचीं खाऊं असतील ? तेठ्हां त्यांनीं त्याला राग सोडून आपल्यांतच रहावें अशी विवर्ती केली .

PARBATIA.

Translate into English :—

A.

पतलिपुत्रमां बले येउटा बाहुनको इन्द्रजित् भनींने एको कोरी धियो जेणे आफ्नु बालवेईमां ज्ञान्बिद्ये सिक्नु मान्येन त्येको बाबुले त्येस्लाह सधें चेताउंदे रहुंद धियो र पनि । त्यो येसोरि अल्लेई र अज्ञानेईमां बददे २ गयेर सबै मान्हे देखि तुच्छ जानीयेको पाईयो अनि पछि त्यो आफ्नु बीत्येको चाल देखि पुरो शोक् गरिकन निदानमां गङ्गाजीको तीरमां गई गयो । त्येणे मं तपस् गयेर आफुले मांग्येका ज्ञात् पाउं भव्ये आस्वा गई धियो । त्यो येसोरि इन्द्रशशीकरण सारो गरि गई रहुंदा इन्द्रजी जसले त्येस्लाह उदेकु मान्हे देख्येको धियो त्येस्लाह ति व्यर्थ तपस्करु देखि फर्काउंनुको लागि बाहुन जस्तो भयेर त्यो पांड आयो । जव त्यो त्येको आंखाले देखुन सकुने सम आह पुग्यो तव जसले बालुवा मुठि भरि २ उठायेर नदीको पानीमां हालदे रह्यो । इन्द्रजित्ले अलिक बेर सम झेदै रह्येर आफ्नु सोधनी गर्नु खोज्ने मन् याम्नु सकुने तर आफ्नु चुप रहाई देखि फुटायेर 'त्येस्लाह किन येस्तो 'उदेकुको बेहोरा गर्नु हुंद क भनि सोध्यो । इन्द्रजे पहिले त्येस्को चेत् गयेन तर जव त्येस् अर्को मान्हेले बले आफ्नु सोधनी दोहोयाउंदे रह्यो तव त्येने मं मान्हे र पशु गङ्गाजी तरि जानुको लागि येउटा पुल बनाउंद कु भनि उत्तर दियो । त्येस्पछि इन्द्रजित्ले 'हांसिकन' भन्यो ए मूर्ख पानीको बहाईले लागींने माफिकको बलुवाले कसोरि येउटा पुल नदीमां बनाउंनु सकींक । इन्द्रले उत्तर दियो यो सचेई जान्द हो भन्ये देखि त न परिकन र उपदेस् न मुनिकन खालि भाकल् र उपास् मात्रे गरिकन कसोरि ज्ञान् पाउंनु खोजइ हो । पाठ न शिकिकन ज्ञान्बिद्ये पाईंक भन्ये देखि त निस्ते अक्षर न लेखिकन लेखाई गरीक होला अनि अकाश ब्रम्हाको हाते दिना तर खालि कलसु र एक वानी रंगले तस्वीर उतार्ने मान्हे देखि मात्रे रवित् भयो होला । ज्ञान्बिद्ये येसोरि पाईइ रहू भन्ये देखि त येस् संवागको कोई पनि पाठ सिक्नुको

लागि दुख उठाउंदेन । इन्द्रदत्तले येइ कुरा मांथि चेत् गथेर त्यो साँचो हो
रक्क भनि चाहा पायेर आफ्नु इन्द्रीवाशीकराण घामि दियो अनि भाकल् र
उपास् गर्नु भन्दा बरु जाति कुत्तिको बाटोले जान्बिद्यो पाउं भनि ठहरायेर
आफ्नु घरमा गयो ॥

B.

गङ्गाजीको तैभ्रमां भयेको येउटा सहरमा येउटा हरीस्वामी भर्नाने
तपस्थे थियो जखे पवित्र ठाँउहरूमा यात्रा गर्ने गर्दै थियो । एक दिन त्येस्
सहरका बासीहरूमांको येउटा दुष्ट मान्छे थियो जसले त्येको सुकर्म सहनु
पनि सक्दैन थियो त्येस्लाइ टाढो देखि भौक् मांग्नुलाइ निकि जाँदै
गय्को हेदै वरिपरिका मान्छेहरूलाइ भनि दियो त्यो कस्तो कपटी तपस्थे
क भनि को तिमिहरूलाइ चाहा क । जखे यो सहर का धेरै केटाकेटीहरूलाइ
खायेको क त्यो येइ हो । त्येको हेउमां हुनेहरूमांको एक जना त्येइ जसो
दुष्ट मान्छेले यो सुनोर भुनो अं साँचिने हो मैले अरुहरूले पनि येसे भन्येको
सुन्येको कु । कुरा बल्लियो गराउनुको लागि तौखोले पनि भन्यो साँचि
साँचिने कुगे येसेने हो । कुरा मान्छेहरूले गय्का भुट्टा कुराहरूको लामो
सांगलीले भलो र निर्दोषी मांथि निन्दा टाँस लगाउद क्नु । तत्र हामिहरूका
बालब्रह्म पनि येभोरि नास् हुँकन् भनि डरायेर त्येस् सहरका बाहुन्हरूले
भेला भयेर त्येस्लाइ सहर देखि निकालि, धपाउने विचार गये । तिनिहरूले
गर्नु आँचोको कुरा सुनिजन हरीस्वामीले तिनिहरूलाइ भन्यो यो कस्तो धोखा
हो । मैले कतिवटा र कसकस्को बालब्रह्म खायेको कु किन यो कुराको चाल
पाउंदैन । यो कुरा सुनिजन ति बाहुन्हरू र अरु २ बासीहरूले आफ्नु २
गत्तो विषयमां बात मान्नु लाग्ये अनि सत्रैले आफ्ना २ सवै बालब्रह्मलाइ
जीउंदे र पला चंगा भयेका पाये । त बेपारीहरू र बाहुन्हरू दुवैले भन्यो
हाय हामिहरूले येउटा साधु मान्छेलाइ आफ्नु सुखैमां अर्पण गये हो ।
हामिहरूका सवै बालब्रह्म जीउंदे क्नु त त्येके कसकस्का बालब्रह्मलाइ
खायो होला । त्येस् पछि तिनिहरूले त्येस्लाइ आफ्नुको रिस् मान्नु हवस् अनि
हामिहरू सह रहनु हत्रस् भनि त्यो सित बिन्ति गर्नु लाग्ये ॥

ASSAMESE.

The figures in the margin indicate full marks.

Translate into English :—

A.

পাটলিপুত্ৰনিবাসী কোনো এজন বামুণৰ ইন্দ্রদত্ত নামে একেটি ল'ৰা 14
আছিল ; বাপেকে তাক সদাই ত্ৰিযন্তাৰ কৰাতো, সি ল'ৰা কালত একো
বিদ্যা নি শিকিছিলে। এনে দৰে এলেহুৱা আৰু একো নজনা হৈ ডাঙৰ
হলত সি দেখিলে যে সকলো মানুহে তাক ঘিণায় ; আৰু তাৰ আগৰ
আচৰণ বিলাক মনত পৰিলত, সি অল্পতাপ কৰি, অৱশেষত তপস্যা কৰি
অন্তীষ্ট জ্ঞান উপাৰ্জন কৰিবৰ আশাবে, গজাৰ দাঁতিত বাস কৰিলে গৈ।
সি শৰীৰক অত্যন্ত ক্ৰেশ দি এই দৰে তপস্যা কৰি থাকোতে, ইন্দ্রই দেখি
আচৰিত হৈ, তাক এই অকামিলা ক্ৰেশৰ পৰা নিবাৰণ কৰিবৰ কাৰণে,
বামুণৰ বেশ ধৰি তাৰ ওচৰলৈ আহিল। ইন্দ্রই সেই বামুণে দেখা
পোৱা ঠাইত আহি হাতৰ মুঠিত বালি ভৰাই লৈ নৈৰ পাৰিলৈ ছটিয়াই
দিব ধৰিলে। ইন্দ্রদত্তই কিছুমান বেলি তেওঁলৈ চাই থাকি, তাৰ কুতূহল
নবাৰণ কৰিব নোৱাৰি, নিমাতভাব এৰি দি, কেলেই এনেকুৱা আচৰিত
কাম কৰিছে বুলি তেওঁক সুধিলে। ইন্দ্রই পোনতে একো নেমাতিলে ;
কিন্তু ইন্দ্রদত্তই ঘূৰি ঘূৰি একেটা কথাৰে মোখাত উত্তৰ দিলে, “মই
গজাৰ ওপৰত মানুহ আৰু জন্তু পাৰ হবলৈ এখন সাঁকো সাজিছোঁ।”
ইয়াকে শুনি ইন্দ্রদত্তই হাঁহি মাত লগালে, “হেৰা আজলা! নৈৰ
ওপৰত বালিৰে সাঁকো কেনেকৈ বান্ধিব পাৰা, নৈৰ সোঁতে বালি উটাই
নিবিবনে?” ইন্দ্রই উত্তৰ দিলে, “যদি তুমি এইটো সঁচা বুলি জানিছা,
তুমি নো নপঢ়াছা শুনাটো ব্ৰত উপবাসৰ দ্বাৰা জ্ঞান উপাৰ্জন কৰিবলৈ
কেলেই পুৰুষাৰ্থ কৰিছা? যদি বিনা অত্যাগে জ্ঞান আৰ্জিব পাৰি,
তেনে হলে আখৰৰ ব্যৱহাৰ নকৰাটেকয়ো লিখিবলৈ শিকিব পাৰি ;
আৰু ব্ৰহ্মাই হাত নলগোৱাটেকয়ো সাধাৰণ ধনিকৰে লিখনী আৰু
বৰণেৰে আকাশো সাজিব পাৰে।” যদি এই পৃথিৱীত মানুহে এনেকৈ
বিদ্যা উপাৰ্জন কৰিব পাৰে, তেনে হলে পঢ়িবলৈ কোনোৱে মুঠেই
বন্ধ নকৰিলেহেঁতেন।” ইন্দ্রদত্তই এই কথাবোৰ গমি চাই সঁচা যেন
দেখি, শৰীৰ নিঃশ্বাস এৰি দিলে, আৰু ব্ৰত উপবাসতকৈ সৰু উপায়েৰে
জ্ঞান উপাৰ্জন কৰিবলৈ কৃতনিশ্চয় হৈ ঘৰলৈ উলটি গ'ল।

B.

গঙ্গাব তীৰত থকা কোনো নগৰত হৰিশ্চামী নামেৰে এজন সন্ন্যাসী 12
বাস কৰিছিল; তেওঁ তীৰস্থানবিলাক দেখি ফুৰিছিল। এদিন সেই
নগৰত বাস কৰা এজন দুষ্ট মানুহে, তেওঁৰ গুণবিলাক সহিব নোৱাৰি,
দূৰৈৰ পৰা তেওঁক মাগিবলৈ খোৱা দেখি, বাটত থিয় হৈ থকা মানুহ-
বিলাকক কলে, “এই সন্ন্যাসীটো কেনো তুচ্ছ” তোমালোকে জানা নে ?
এইটোৱেই সেই মানুহ, যোনে এই নগৰৰ ভালেমান ল’ৰাক খাইছে।”
আক ! এটা থিয় হৈ থকা ভাবে নিচিনা দুষ্ট মানুহে তাৰ কথা শুনি
কলে, “এইটো সঁচা কথা, আন মানুহেও এই দৰে কোৱা মই শুনিছোঁ।”
তৃতীয় এজন মানুহে সেই কথা হৃদয় কলে, “বিষয়টো এনেকুৱাই হয়।”
অন্য মানুহলিকো সজা মিছা কথাৰ দীঘল গল্পবিত্তিৰে সজা আৰু সাধু
মানুহৰ ওপৰতো কলঙ্ক মেৰুৱাই দিয়ে। সেই নগৰৰ বায়ুণবিলাকে
তেওঁ বিলাকৰ ল’ৰাবোৰে। এই দৰে নষ্ট কৰিব বুলি আশঙ্কা কৰি,
আটাইবোৰাগোটোহাট, তেওঁক সেই নগৰৰ পৰা খেদাই দিবলৈ আলচ
কৰিলে। হৰিশ্চামীয়ে তেওঁবিলাকৰ অভিপ্ৰায় শুনি কলে, “এইটো
কি ভ্ৰান্তি ! তোমালোকে আগেয়ে ঠিক নকৰা কিয়, মই কিমান ল’ৰা
আৰু কাৰ কাৰ ল’ৰা খালোঁ ?” ইয়াকো শুনি বায়ুণবিলাকে আৰু
নগৰত থকা আন আন মানুহবিলাকে তেওঁবিলাকৰ মাজত গণি পিতি
চাই পালে, যে তেওঁবিলাকৰ আটাইবোৰ ল’ৰা ভালেকুশলৈ জীয়াই
আছে। আৰু বেণীবিলাকে আৰু বায়ুণবিলাকে একেবাৰে কলে,
“হায়, আমি এই পুণ্যস্বামী মানুহজনৰ মৃত্যু কৰি সন্তোষ কৰিছিলোঁ।
আমাৰ ল’ৰাবিলাক আটাইটি জীয়াই আছে, তেনে হলেমো তেওঁ কাৰ
ল’ৰা খালে ?” তেতিয়া তেওঁবিলাকে সেই সন্ন্যাসীক খং এৰি দিবলৈ
আৰু তেওঁবিলাকৰ লগত থাকিবলৈ প্ৰাৰ্থনা কৰিলে।

KHASI.

Translate into English :—

A.

La don uwei U Brahmon uba shong duh ha Ka Pataliputra uba don
u khu nuba tang marwei ba la khot-kvnteng U Infradath, ia uba lá la
sneng kyntu borabor da la U Kypa, u'm ju shah hikai ka ha ki science
haba u dang khynnah. Kumne u la nangsan ha ka jingalhia bad ka
jingbieit, te u la shem ialade ia uba la ih-bein da ki briw baroh, te u da
sngow pang 'núl eh namar ki jing leh jong u bamyn-shiwa, ha kaba khaduh
u la leit sha ki rud Ka Ganga u da kyrmon da kaba u pyndep pyrkhing
ia ki niam ki rukom Un da dup ioh ia ka jingtip ba u kuah. Katba u

dang pyniāp throin eh ia ka doh kumne, U Indra uba khymihthuh ia ā da kabaap sngow-lyngngoh, u la wan ha u u da leh kop sop ia lade kum U Brahmon khnang ba'n pynkohnguh ia u ba'n ieh noh noh ia ki jingleh ki b'ym lar-kam. Katba u dang wan jan ha u, u iaitam shi kham shi kham u shiap u da bred ia ki ha ka um ka wah U Indradatta ynda u la khymihthuh kham slem, u'm lah ba'n khang shuh ia la jingleh-lushia hinroi u da knen u kyōli ia u balein u leh phyllah kumta. Ha kaba nyingkong U Indra u'm shah skhor ia u, hinrei ba uta uwei pat u dem kylli kabo, u la jubab, "O nga thaw ia ka jing king halor Ka Ganga ia u briw bad mrad ba'n iaiaid sha shiliang." Hangta U Indradatta u la ong da kaba rykhie." Me uba biēt, da kumno lah ba'n thaw ia ka jingking halor ka wah da u shiap ia ka ba'n sa kit-noh khlem artatin da ka lat-lat?" U Indra u la jubab, "Lada phi tip ia kane ka jingshisha, balei phi pyrshang ba'n ioh ka jingtip da ki jingkular Skhem bad ka jing Shah jingit, khlem da pule bad shah shkor ia ki lektūr? Da shisha lada lah ba'n ioh ka jing-nang khlem pule khot, te lah ba'n thoh khlem da pyndom-kam ia ki dak, bad ia ka suin byneng ha lah thaw khlem kti U Brahma tang da u nongsuit-rong da ka brut bad u khiu-rong. Lada lah ba'n ioh ia ka jingnang ha kata ka rukom ymdon uwei ha ka pyrthei u ha'n leh shirom ia ka ba'n pule khot satia." U Indradatta ynda u la pyrkhāt bha ia kine ktin bad u da ioh-ih ba ki long kiba shisha u la wai-noh ia ka ba'n pynshitom ia lade bad u la leit sha ha ing u da thymu ba'n wad ia ka jingtip da kioi kiei kiba kham bha ban ia ki jingkular skhem ba ka jingshahjingit.

B.

Ha kawei ka nongbap harud Ka Ganga, la shong-sah uwei u phukir uba la kyrteng u Harriswami, uba jir leit khymih ia ki jaka kynthang. Kawei ka sngi uwei u 'riw-bymman na pyddeng ki nong shnong, u b'ym lah ba'n shah ia ki jingshida jong u, u da ioh-ih ia u na sha jingngai ba u mih noh ba'n makia, u la ong ha kita kiba ieng hajan, "Phi tip u nong-leh-arsap uba katno utai u phukir u long? Dei ma-u uba la bām duh noh būn ki khynnah ha kane ka nongbah." Uwei na k'ta kiba ieng hajan, u 'riw-bymman kat ma-u hi, haba u la ioh sngow ia u u la ong, "Ka long ka bashisha; nga la ioh. Sngow ia kiwei pat ki briw nuh ki da ong kumjuh. Uba lai u da pynskhem u la ong, "Ka long kumta." Bun ki jingkren tuhkhana ba lamler jong ki 'riw-bymman ki pyn bud nām ia uba bha bad uba lui lui. Hangta Ki Brahman ha kata ka nongbah, ki da shepting ba ia ki khynnah jong ki ruh lah ba'n pynduh kumjuh, ki la itlang bad kila iapyrkhat ba'n beh-shnong ia u. Haba u Harriswami u la ioh-sngow ia ka jingthymu jong ki, u ong ha ki, "Ka thok-shukor aiuh kane? Balei phi'm wad ia ka jingtip baskhem katno ngut ki khynnah nga la bām bad ki jongno?" Haba ki la ioh sngow ia kane, Ki Brahman bad kiwei pat ki nongshong-shnong ki la sydang ba'n khymihthuh ha pyddeng jong ki hi bad ki la shem ba ki baroh ki don la ki khynnah ki dang im bad ki dang khoit. Bad ki nongkha-ii bad Ki Brahmon ki la iaong kumjuh, Adur ba'n shot! ha la ka jingbieit ngi la leh b'ymhok ia u 'riwkhuid. Xi khynnah jong ngi baroh ki dang im, te ki khynnah jongno u la lap bam noh? Te hangta ki la iakypād ia u ba'n wai noh ia la ka jingbittar, bad ba'n iai sah lem bad ki.

ENGLISH.

SECOND PAPER.

PART I (b).

(For Candidates whose vernacular is ENGLISH.)

The figures in the margin indicate full marks.

1. Write a conversation between two friends on the conveniences and the drawbacks of railway travelling in India. 13
2. Write a report of an animated discussion in some school debating club on the relative advantages of health, wealth, and wisdom. 13

ENGLISH GRAMMAR AND COMPOSITION.

SECOND PAPER.

PART II.

For all Candidates.

The figures in the margin indicate full marks.

1. (a) Construct short sentences introducing the following as dependent clauses :— 2
 - (i) I am quite well, but have been very ill.
 - (ii) What was he saying ?
- (b) Explain and illustrate by short sentences the difference in meaning between the two plurals of each of the following words :— 6

brother, cloth, die, penny.
- (c) Parse the words italicized in the following :—This house is *to let* ; wait *a minute* ; *out* upon it ; he *asked if* you were going. 2
2. (a) Punctuate the following, using capital letters and inverted commas where necessary :— 3

i said to tom do you not wish yourself in your own country again yes he said what would you do there said i would you turn wild and eat mens flesh again he looked full of concern and shaking his head said no no

the examiners in sanskrit are prof a fisher d lit in a and james brown esq ll d.
- (b) Convert the following into the indirect form of speech :— 3

My lords, I am old and weak, and at present unable to say more : but my feelings were too strong to have said less. " I could not have slept this night without giving this vent to my abhorrence of such preposterous principles.
- (c) Insert an appropriate preposition in each of the following blanks :— 2

He is destined—the Bar. His face is peculiar—me. I have done my duty—him. He lends money—good security. Is there

any cause—this delay? We must provide—this risk. He is negligent—his business. I am tired—my exertions.

3. (a) Give two meanings of each of the following, and construct short illustrative sentences :—pains, customs, effects, colours. 6

(b) Construct sentences to illustrate the difference in meaning between the following pairs of words :—temporal, temporary ; continuous, continual ; notorious, illustrious ; contemptuous, contemptible. 4

4. Address a letter of about 150 words to your teacher, bidding him good-bye, and informing him of your future aims and prospects. 10

Give the exact meaning of the following sentences :— 4

- (a) { Let us proceed to business.
 { Let us proceed with the business.
- (b) { He parted with all his property.
 { He parted from his friends.
- (c) { I am not concerned in the transaction.
 { I am much concerned at his loss.
- (d) { Communicate with him on this.
 { Communicate this to him.

6. Correct the following :—

(a) His arguments are quite failed. And he has not the leg to stand upon.

(b) Though he has an excellent tutor, and every advantages, but he twice failed to pass in the examination.

(c) It is all on account that he does not work himself too hard.

(d) Please count how many words are there in a leaf of your page.

(e) When you last have been to your village, and when you expect to go again?

(f) Dear Sir,

May I come at yours for a private business on Saturday first in the a.m. and oblige

yours truly X,

MATHEMATICS.

Paper-Setters— $\left\{ \begin{array}{l} \text{C. LITTLE, Esq., M.A.} \\ \text{D. N. MALLIK, Esq., B.A., B.Sc.} \\ \text{BABU HARANCHANDRA BANERJEE, M.A., B.L.} \end{array} \right.$

ARITHMETIC AND ALGEBRA.

Head Examiner—BABU GAURISANKAR DE, M.A., B.L.

Examiners— $\left\{ \begin{array}{l} \text{BABU SARADAMOIHAN BHATTACHARYYA, M.A.} \\ \text{,, BHAGABATICHARAN DAS, M.A.} \\ \text{,, SARADAPRASAD BANERJEE, M.A.} \\ \text{,, SARADAPRASANNA DAS, M.A.} \\ \text{,, SATISCHANDRA RAY, M.A.} \\ \text{A. B. STOKES, Esq., M.A.} \\ \text{F. WALFORD, Esq., A.R.C.S., A.M. INST.} \\ \text{M.E.} \\ \text{J. V. FRANCIS, Esq.} \end{array} \right.$

The figures in the margin indicate full marks.

1. What do you understand by the G.C.M. and the L.C.M. of two or more integers? What is a primo number? 2
Find the least number which is exactly divisible by 12, 34, 56, and 78. 3

2. Simplify

$$(1) \frac{2 \times 2 \times 2 + .02 \times .02 \times .02}{.6 \times .6 \times .6 + .06 \times .06 \times .06} = \frac{2\frac{2}{3} - 1.16}{2.3 + 1\frac{1}{4}}$$

$$(2) \begin{array}{ll} \text{Rs. 2 5 as. 6 p.} & 1^{\text{hr.}} 16 \text{ m. 45 sec.} \\ \text{Rs. 3 12 as.} & 2 \text{ hr. 7 m. 55 sec.} \end{array}$$

3. Find the price of 8 maunds, 16 seers, 2 chhataks of rice at Rs. 5 9 as. per maund. 5

4. How many paving stones, each of them 1 foot long and 9 inches wide, will be required for paving a street 30 feet wide, surrounding the outside of a square grass plot, the area of the grass plot being 10 acres? 7

5. If 8 men or 15 women can earn Rs. 120 in 30 days, how much can 21 men and 24 women earn in 45 days? 6

6. The debts of a bankrupt amount to £2134. 10s. 6d. and his assets consist of a property worth £916 5s. 4d. and an undiscounted Bill of £513 due 4 months hence. simple interest at 4 per cent. How much in the pound can he pay to his creditors? 8

7. Prove that $a^m \times a^n = a^{m+n}$, where m and n are positive integers. 3

Simplify

$$\frac{(x^2yz)^2 (y^2xz)^2 (z^2xy)^2}{\left(\frac{yz}{x}\right)^8 \cdot \left(\frac{zx}{y}\right)^8 \cdot \left(\frac{xy}{z}\right)^8}$$

8. (1) Resolve into factors :—

(i) $x^2 + 2x - 323$. 2

(ii) $a^2(b+c) + b^2(c+a) + c^2(a+b) + 2abc$. 3

(2) If $2s = a + b + c$, show that 4

$$\frac{1}{s-a} + \frac{1}{s-b} + \frac{1}{s-c} - \frac{1}{s} = \frac{abc}{s(s-a)(s-b)(s-c)}$$

9. (1) Find the G.C.M. of 5

$x^4 - 115x + 24$ and $24x^4 - 115x^3 + 1$.

(2) Extract the square root of 3

$$\left(x + \frac{1}{x}\right)^2 - 4\left(x - \frac{1}{x}\right)$$

10. Solve

(1) $\frac{2}{2x-5} + \frac{1}{x-3} = \frac{6}{3x-1}$. 2

(2)
$$\left. \begin{aligned} x+y+z &= a+b+c \\ \frac{x}{a} + \frac{y}{b} + \frac{z}{c} &= 3 \\ ax+by+cz &= a^2+b^2+c^2 \end{aligned} \right\}$$
 4

11. A man met several beggars and wished to give 25 pence to each; but on counting his money he found that he had 10 pence too little for that, and then made up his mind to give 20 pence each. After doing this he had 20 pence over. What had he at first, and how many beggars were there? 5

12. (1) If $a:b:c:d:e:f$, show that each of these ratios 2

$$= \frac{ma+nc+pe}{mb+nd+pf}$$

(2) Prove that if

$$\frac{ay-bx}{c} = \frac{cx-az}{b} = \frac{bz-cy}{a}$$

then

$$\frac{x}{a} = \frac{y}{b} = \frac{z}{c}$$

GEOMETRY.

Head Examiner—BABU GAURISANKAR DE, M.A., B.L.

| | | |
|------------|---|---------------------------------|
| Examiners— | { | BABU MOHINIMOHAN RAY, M.A. |
| | | „ UPENDRANARAYAN SINHA, M.A. |
| | | „ MOHINIMOHAN CHAUDHURI, M.A. |
| | | „ RAKHAIRAJ BISWAS, M.A. |
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| | | „ RAICHARAN BISWAS, M.A. |
| | | „ HARILAL CHAUDHURI, M.A. |
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| | | „ PHANINDRALAL GANGULI, M.A. |
| | | „ SURENDRANATH CHATTERJEE, M.A. |

The figures in the margin indicate full marks.

1. If two triangles have two angles of the one equal to two angles of the other, each to each, and a side of one equal to a side of the other, these sides being opposite to equal angles in each; then shall the triangles be equal in all respects. 8

Prove that any point on the bisector of an angle is equidistant from the lines containing the angle. 3

2. If the square described on one side of a triangle be equal to the sum of the squares described on the other two sides, then the angle contained by these two sides shall be a right angle. 8

Enunciate the converse of this. 1

3. Describe a square that shall be equal to a given rectilineal figure. 8

4. Angles in the same segment of a circle are equal. 7

Show that of all triangles on the same base and having the same vertical angle, the isosceles triangle is the greatest. 4

5. If from any point without a circle a tangent and a secant be drawn, then the rectangle contained by the whole secant and the part of it without the circle shall be equal to the square on the tangent. 8

Show how to draw equal tangents to two given circles which do not intersect. 4

6. Describe an isosceles triangle having each of the angles at the base double of the third angle. 9

Divide a right angle into five equal parts. 2

7. Construct a square, having given the difference between a diagonal and a side. 6

8. Given the base of a triangle and the sum of the squares of its sides, find the locus of its vertex. 6

9. Prove that the three perpendiculars drawn from the vertices of a triangle to the opposite sides meet in a point. 6

GREEK.

Papers set by— { REV. A. P. BEGG, M.A.
 „ R. GEE, M.A.
 „ M. GHOSE, ESQ., B.A. (OXON.).

GREEK TEXT AND GRAMMAR.

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.).

The figures in the margin indicate full marks.

1. Translate into English the following passage :—

Μὴ δὴ οὕτως ἀγαθὸς περ ἑὼν, θεοείκελ' Ἀχιλλεῦ,
 κλέπτε νόψ, ἐπεὶ οὐ παρελεύσεται οὐδὲ με πείσεις.
 ἢ ἐθέλεις, ὅφρ' αὐτὸς ἐχῆς γέρας, αὐτὰρ ἔμ' αὐτῶς
 ῥῆσθαι δυνάμενον, κέλει δέ με τήνδ' ἀποδοῦναι ;
 ἀλλ' εἰ μὲν δώσουσι γέρας μεγάθυμοι Ἀχαιοί,
 ἄρσαντες κατὰ θυμόν, ὅπως ἀντάξιν ἔσται·
 εἰ δέ κε μὴ δώσωκιν, ἐγὼ δέ κεν αὐτὸς ἔλωμαι
 ἢ τεὸν ἢ Αἴαντος ἰὼν γέρας, ἢ () δυσῆος
 ἄξω ἑλών· ὃ δέ κεν κεχολώσεται ὃν κεν ἴκωμαι.

5

Scan the first five lines above.

5

How do you supply the apodosis to the hypothetical sentence

1

ἀλλ' εἰ μὲν δώσουσι, &c. ?

2. Translate into English the following passage :—

Ἦμος δ' ἠριγένεια φάνη ῥοδοδάκτυλος Ἥως,
 καὶ τότε ἔπειτ' ἀνίγοντο μετὰ στρατὸν εὐρὺν Ἀχαιῶν·
 τοῖσιν δ' ἔκμενον οὐκ ἔεικέλεργος Ἀπὸλλων.
 οἱ δ' ἰστὸν στήσαντ' ἀνὰ θ' ἰστίᾳ λευκὰ πέτασσαν·
 ἐν δ' ἄνεμος πρῆσεν μέσσην ἰστίον, ἀμφὶ δὲ κύμα
 στείρη πυρφύκιον μεγάλη' ἔαχε νηὸς ἰοίσσης·
 ἢ δ' ἔθεεν κατὰ κύμα διαπρήγισσυσσιν κέλευθον.
 αὐτὰρ ἐπεὶ ῥ' ἴκοντο κατὰ στρατὸν εὐρὺν Ἀχαιῶν,
 νῆα μὲν οἳ γε μέλαιναν ἐπ' ἡπειροῖο ἔρυσσαν
 ὑψοῦ ἐπὶ ψαμάθοις, ὑπὸ δ' ἔρματα μικρὰ τίνυσσαν.
 αὐτοὶ δ' ἐσκίδναντο κατὰ κλισίας τε νέας τε.

6

What is the exact force of the different cases after the preposition ἐπὶ in ἐπ' ἡπειροῖο and ἐπὶ ψαμάθοις respectively ?

2

Give the principal parts of the verbs πέτασσαν, πρῆσεν, ἔαχε and ἐσκίδναντο.

2

3. Translate into English, briefly annotating the words underlined :—

7

(a) Ναὶ μὰ τὸδε σκῆπτρον· τὸ μὲν οὐποτε φύλλα καὶ ὄζους
 φύσει, ἐπεὶ δὴ πρῶτα τομὴν ἐν ὄρεσσι λέλαιπεν.

1

- (b) Κούροι μὲν κρητήρας ἐπεστέψαντο ποτοῖο 1
νόμῃσαν δ' ἄρα πᾶσιν ἐπαρξάμενοι δεπάεσσιν.
- (c) Εἰ περ γὰρ κ' ἐθέλῃσιν Ὀλύμπιος ἀστεροπητῆς 1
ἐξ ἐδέων στυφελίξαι· ὁ γὰρ πολὺ φέρτατός ἐστιν.
- (d) Κλυθὶ μευ, ἀργυρότ' ὅς Χρύσην ἀμφιβέβηκας 2
Κίλλαν τε ζαθέην Τενέδοιό τε Ἴφι ἀνάσσεις,
Σμινθεῦ.
- (e) Αὐτὰρ ἐπεὶ ῥ' εὗξαντο καὶ οὐλοχύτας προβάλλοντο, 2
ἀνέρυσταν μὲν πρῶτα καὶ ἐσφαξιν καὶ ἔδειραν,
μηρούς τ' ἐξέταμον κατὰ τε κνίσῃ ἐκάλυσαν,
δίπτυχα ποιήσαντες, ἐπ' αὐτῶν δ' ὠμοθέτησαν.

4. What do you know of the following names of people or places, given as they stand in the text? 5

Σίντιες ἄνδρες, Κλυταμνήστρης, Βριέρεων, Εὐρυβύτην, ἀμύμονας Αἰθιοπῆας, Ἰδομενεύς, κούρην Ἰριμῆος, Καινέα, Θήβην, Λητοῦς καὶ Δῶς υἱός.

5. Translate into English:— 8

Εἰς δὲ δὴ εἶπε, προσποιούμενος σπεύδειν ὡς τάχιστα πορεύεσθαι εἰς τὴν Ἑλλάδα, στρατηγούς μὲν ἐλέσθαι ἄλλους ὡς τάχιστα, εἰ μὴ βούλεται Κλέαρχος ἀπίγειν· τὰ δ' ἐπιτήδεια ἀγοράζεσθαι καὶ συσκευάζεσθαι· ἐλθόντας δὲ Κῦρον αἰτεῖν πλοῖα, ὡς ἀποπλέειν· ἐὰν δὲ μὴ δίδῃ ταῦτα, ἡγεμόνα αἰτεῖν Κῶρον, ὅστις διὰ φιλίας τῆς χώρας ἀπάξει· ἐὰν δὲ μὴδὲ ἡγεμόνα δίδῃ, συντάττεσθαι τὴν ταχίστην, πέμψαι δὲ καὶ προκαταληφμένους τὰ ἄκρα, ὅπως μὴ φθισωσι μήτε Κῦρος μήτε οἱ Κίλικες κατυλαβόντες, ὧν πολλοὺς καὶ πολλὰ χρήματα ἔχομεν ἀνηρπακότες.

Parse and give the principal parts of ἐλέσθαι, ἐλθόντας, προκαταληφμένους, ἀνηρπακότες. 2

Explain the construction of τὴν ταχίστην and πέμψαι. 2

Explain the mood of βούλεται. 1

Write out the present indicative active of δίδωμι. 1

6. Translate into English:— 5

ὦ ἄνδρες Ἕλληνες, οὐκ ἀνθρώπων ἀπορῶν βαρβάρων συμμάχους ὑμᾶς ἄγω, ἀλλὰ νομίζων ἀμείνους καὶ κρείττους πολλῶν βαρβάρων ὑμᾶς εἶναι, διὰ τοῦτο προσέλεμβον. ὅπως οὖν ἐσεσθε ἄνδρες ἄξιοι τῆς ἐλευθερίας ἧς κέκτησθε. εὖ γὰρ ἴστε ὅτι τὴν ἐλευθερίαν ἐλοίμην ἂν ἀντὶ ὧν ἔχω πάντων καὶ ἄλλων πολλαπλασιῶν.

Parse κρείττους and ἴστε. 1

Explain the genitives underlined. Explain the construction of ὅπως. 4

7. Translate into English :—

5

Οὐ μὲν δὴ οὐδὲ τοῦτ' ἂν τις εἴποι ὡς τοὺς κακούργους καὶ ἀδίκους εἶα καταγελᾶν, ἀλλ' ἀφειδέστατα πάντων ἐτιμωρεῖτο. πολλὰκις δ' ἦν ἰδεῖν παρὰ τὰς στειβομένας ὁδοὺς καὶ ποδῶν καὶ χειρῶν καὶ ὀφθαλμῶν στερομένους ἀνθρώπους· ὥστ' ἐν τῇ Κύρου ἀρχῇ ἐγένετο καὶ Ἑλληνι καὶ βαρβάρῳ μηδὲν ἀδικοῦντι ἀδεῶς πορεύεσθαι ὅποι τις ᾔθελεν, ἔχοντι ὅτι προχωροίη.

Decline in the three numbers ἀδίκους and ἀδικοῦντι in all genders.

3

8. Explain—

3

- (a) Ὅσοι εἰς Καστωλοῦ πεδῖον ἀθροίζονται.
 (b) Χερρόνησος ἡ καταντιπέρας Ἀβύδου.
 (c) Αἱ Ἴωνικαὶ πόλεις.

9. At what places along the route might Artaxerxes' generals have opposed Cyrus' advance with good hope of success? What opposition did Cyrus meet with?

5

GREEK TRANSLATION AND COMPOSITION.

Examiner—REV. A. P. BEGG, M.A.

The figures in the margin indicate full marks.

1. Translate into English :—

15

(a) Ἐγὼ δ' οὕτω γινώσκω. Εἰ μὲν ἀνάγκη ἐστὶ μάχεσθαι, τοῦτο δὲ παρασκευάσασθαι, ὅπως ὡς κράτιστα μαχοῦμεθα· εἰ δὲ βουλόμεθα ὡς ῥᾶστα ὑπερβάλλειν, τοῦτό μοι δοκεῖ σκεπτόεν εἶναι, ὅπως ἐλάχιστα μὲν τραύματα λάβωμεν, ὡς ἐλάχιστα δὲ σώματα ἀνδρῶν ἀποβάλωμεν. Τὸ μὲν γὰρ ὅρος ἐστὶ τὸ ὀρώμενον πλέον ἢ ἐφ' ἐξήκοντα στάδια, ἄνδρες δ' οὐδυμοῦ φυλάττοντες ἡμᾶς φανεροὶ εἰσιν. ἀλλ' ἢ κατ' αὐτὴν τὴν ὁδὸν· πολὺ οὖν κρεῖττον τοῦ ἐρήμου ὁρους καὶ κλέψαι τι σπειρᾶσθαι λαθόντας καὶ ἀρπάσαι φθάσαντας, ἣν δυνώμεθα, μᾶλλον ἢ πρὸς ἰσχυρὰ χωρία καὶ ἀνδρας παρεσκευασμένους μάχεσθαι.

- (b) Ἔσπετε νῦν μοι, Μοῦσαι, Ὀλύμπια δώματ' ἔχουσαι,--
 ὑμεῖς γὰρ θεαὶ ἐστέ, πάρεστέ τε. ἴστε τε πάντα,
 ἡμεῖς δὲ κλέος οἶον ἀκούομεν, οὐδέ τι ἴδμεν,--
 οὔτινες ἡγεμόνες Δαναῶν καὶ κοίρανοι ἦσαν.
 πληθύν δ' οὐκ ἂν ἐγὼ μῦθήσομαι οὐδ' ὀνομήνω,
 οὐδ' εἰ μοι δέκα μὲν γλώσσαι, δέκα δὲ στόματ' εἶεν.
 φωνὴ δ' ἄρρηκτος, χάλκεον δέ μοι ἦτορ ἐνείη,
 εἰ μὴ Ὀλυμπιάδες Μοῦσαι, Διὸς αἰγιόχοιο
 θυγατέρες, μνησαίεθ' ὅσοι ὑπὸ Ἴλιον ἦλθον.
 ἀρχοὺς αὖ νηῶν ἐρέω, νῆάς τε προπάσας.

2. Translate into English :—

5

- (a) Οὐκ ἐφ' ἡμῖν ἔστι τὰ μέλλοντα προειδέναι.
 (b) Ὁ ἀθλητὴς ἐφοβείτο μὴ οὐ στεφανοῖτο.
 (c) Τὸ εὖ ζῆν πολὺ διαφέρει τοῦ εὖ λέγειν.
 (d) Μετ' ὀλίγ' ἔτη ἡ γυμναχία λελύσεται.
 (e) Ἡ μέλιττα τὸ κέντρον ἀποβαλοῦσα ἀποθνήσκει.

3. Translate into Greek :—

10

- (a) In this way an army was secretly maintained.
 (b) He laid plans in order that he might not be in his brother's power.
 (c) A herald announced that the king was himself leading the army.
 (d) It was difficult in the darkness to distinguish friends from foes.
 (e) If he speak the truth he will have the approval of all good men.

4. Translate into Greek :—

10

When they reached the Euphrates they halted for five days. Cyrus sent for the Greek generals and said that his march was to be against the great king to Babylon, and bade them tell the soldiers and persuade them to follow. Accordingly the generals called the soldiers together and told them the news. The soldiers were angry with the generals and said that they had known this long ago and concealed it. They refused to go unless the same money were given to them as had been given to those who went up with Cyrus to the father of Cyrus.

LATIN.

Papers set by— { REV. J. EDWARDS, M.A.
 „ R. F. PEARCE, M.A.
 HARINATH DE, ESQ., M.A. (Cal. and Cantab.).

LATIN TEXT AND GRAMMAR.

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.).

The figures in the margin indicate full marks.

1. Translate the following, and explain all allusions :—

15

(a) Verum enimvero, pro deum atque hominum fidem, victoria in manu vobis est, viget aetas, animus valet : contra illis annis atque divitiis omnia consenuerunt. Tantum modo incepto opus est : cetera res expedit. Etenim quis mortalium, cui virile ingenium est, tolerare potest, illis divitias superare quas profundant in extruendo mari et montibus coaequandis, nobis rem familiarem etiam ad necessaria deesse ? Illos binas aut amplius domos continuare, nobis larem familiarem nusquam ullum esse ?

(b) Eadem Galli fatentur ac Lentulum dissimulantem coarguunt praeter litteras sermonibus, quos ille habere solitus erat, ex libris Sibyllinis regnum Romae tribus Corneliis portendi: Cinnam atque Sullam antea, se tertium esse cui fatum flet urbis potiri. Praeterea ab incenso Capitolio illum esse vigesimum annum quem saepe ex prodigiis haruspices respondissent bello civili cruentum fore.

(c) Deos hominesque testamur, imperator, nos arma neque contra patriam cepisse neque quo periculum aliis faceremus, sed uti corpora nostra ab iniuria tuta forent, qui miseri egentes violentia atque crudelitate foeneratorum plerique patriae sed omnes fama atque fortunis expertes sumus. Neque cuiquam nostrum liquit more maiorum lege uti neque amisso patrimonio liberum corpus habere: tanta saevitia foeneratorum atque praetoris fuit. Saepe maiores vestrum miseriti plebis Romanae decretis suis inopiae eius opitulati sunt, ac novissime memoria nostra propter magnitudinem aeris alieni volentibus omnibus bonis argentum aere solutum est.

2. Translate the following, and explain the construction of the words in italics:— 10

(a) *Alieni* adpetens, *sui* profusus.

(b) Neque dicere neque facere quicquam *pensi* habebat.

(c) Optimum *factu* credens multa antecapere quae *bello usuri forent*.

(d) *Eo* magis refert me *mihi* atque *vobis* timere.

(e) Senatus decrevit darent operam consules ne quid respublica *detrimenti caperet*.

3. Explain the following expressions:— 8

Libera custodia; quaestor pro praetore; ante diem VI Kalendas Novembris; ducenta sestertia; novus homo; legibus ambitus interrogati; pedibus ire in sententiam alicuius; signa canere iubet.

4. Translate the following, giving the context, and explaining allusions:— 24

(a) Mene incepto desistere victam
nec posso Italia Teucrorum avertere regem?

quippe vetor fatis. Pallasne exurere classem
Argivom atque ipos potuit submergere ponto
unius ob noxam et furias Aiacis Oili?

(b) Tantane vos generis tenuit fiducia vestri?
iam caelum terramque meo sine numine, venti,
miscere, et tantas audetis tollere moles?
quos ego—sed motos praestat componere fluctus:
post mihi non simili poena commissa luetis.

(c) Aspera tum positis mitescent saecula bellis;
cana Fides et Vesta, Remo cum fratre Quirinus
iura dabunt: dirae ferro et compagibus artis
claudentur Belli portae.

(d) Nec procul hinc Rhesi niveis tentoria velis
agnoscit lacrimans, primo quae prodita somno
Tydides multa vastabat caede cruentus,
ardentisque avertit equos in castra, priusquam
pabula gustassent Troiae Xanthumque bibissent.

(e) Officio nec te certasse priorem
paeniteat: sunt et Siculis regionibus urbes
armaque Troianoque a sanguine clarus Acestes.

(f) Dixit, et in mensam laticum libavit honorem,
primaque libato summo tenuis attigit ore:
tum Bitiae dedit increpitans: ille impiger hausit
spumantem pateram et pleno se proluit auro.

5. Explain:—transfixo pectore flammam; Scyllaeam rabiem; 8

praeuuptus aquae mons ; Cerealia arma ; sunt lacrimae rerum : vina coronant ; tonsis mantelia villis ; • tanto cardine rerum.

6. Parse in full :—*obstupere, repostum, accessit, confisi.*

5

(Give the principal parts of the verbs from which the following come :—*reterit, oblata, nacti, adtriverat, ratus, parta.*

7. (Give in full :—imperfect subj. of *sum*—imperfect subj. passive of *facio*—present subj. of *volo*—present participle of *eo*.

4

8. Explain the meaning and construction of the words *quin* and *quominus*, giving sentences to illustrate their use.

3

9. What cases are used after the following verbs :—*utor, impleo, consulo, officio, dignor, insto* ? •

3

LATIN TRANSLATION AND COMPOSITION.

Examiner.—REV. R. F. PEARCE, M.A.

The figures in the margin indicate full marks.

1. Translate into English :—

(a) Hannibal ab Herdonia Tarentum duxerat legiones spe, aut ui, aut dolo, ards Tarentinae potiundae. Quod ubi parum processit, ad Brundisium flexit iter, prodi id oppidum ratus. Ibi quoque cum frustra treret tempus, legati Campani ad eum uenerunt, querentes simul, orantesque. Quibus Hannibal magnifice respondit, et antea se soluisse obsidionem, et nunc aduentum suum consules non laturos. Cum hac spe dimissi legati uix regredi Capuam iam duplici fossa nalloque cinctam potuerunt. Cum maxime Capua circumuallaretur, Syracusarum oppugnatio ad finem uenit, praeterquam ui ac uirtute ducis exercitusque intestina etiam proditione adiuta. Namque Marcellus, quamquam nec ui capi uidebat posse, inexpugnabilem terrestri ac maritimo situ, urbem nec fame, quam prope liberi ab Karthagine commeatus alerent, tamen, ne quid inexpectum relinqueret, transfugas Syracusanas colloquiis suae partis tentare hominum animos iussit.

(b) Effigiem, rex Croese, tuam, ditissimo regum, uidit apud manes Diogenes Cynicus.

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Constitit utque procul, solito maiore cachinno concussus, dixit : ' Quid tibi diuitiae nunc prosunt, regum rex o ditissimo, cum sis sicut ego solus, me quoque pauperior. Nam quaecumque habui, mecum fero ; cum nihil ipse ex tantis tecum. Croese, feras opibus.'

(c) Alienum aes homini ingenuo acerba est seruitus.

8

Animo imperabit sapiens, stultus seruiet.

Bene uixit is qui potuit cum uoluit mori.

Homo extra corpus est suum cum irascitur.

Male uincit quem post paenitet victoriae.

Rapere est accipere quod non possis reddere.

Spina etiam grata est ex qua spectatur rosa.

Taciturnitas stulto homini pro sapientia est.

Tam deest auaro quod habet quam quod non habet.

Ubi innocens formidat damnat iudicem.

2. Translate into Latin prose :—

Thereupon the soldiers grew alarmed that with his changeable

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and artful nature he might desert them and once more gain the favour of his countrymen. They had heard that on the former occasion, although he had promised to come on the 11th of September and to leave nothing undone in order to banish the most turbulent citizens, he did not arrive till the 11th of October. But the general arrived in good time to encourage his soldiers, whom he addressed in the following terms :—(*Oratio Obliqua*) ‘Soldiers, I am aware that, in future, you are not going to put faith in my promises, unless you see me fulfilling what I have already promised. But why do you make useless lamentations ? Press on. Of what avail is it to delay here ? Will not the enemy crush us while we delay ? If you had obeyed my lieutenant before, you would have been in safety by now, and even now you may yet be safe. Be of good courage. Soon the cold will grow less severe.’

FRENCH TEXT AND GRAMMAR.

Paper set by—REV. FATHER E. FRANCOTTE, S.J.

Examiner—REV. FATHER E. FRANCOTTE, S.J.

The figures in the margin indicate full marks.

1. Translate :— 4
 - (a) Le père mort, les fils *vous* retournent le champ,
Deçà, delà, partout ; si bien qu’au bout de l’an
Il *en* rapporta davantage.
D’argent, point de caché. Mais le père fut sage
De leur montrer, avant sa mort,
Que le travail est un trésor. 4
 - (b) Près du rouet de sa fille chérie 6
Le vieux sergent se distrait de ses maux,
Et d’une main que la balle a meurtrie,
Berce on riant deux petits-fils jumeaux.
Assis tranquille au seuil du toit champêtre,
Son seul refuge après tant de combats,
Il dit parfois : ‘Ce n’est pas tout de naître ;
Dieu, mes enfants, *vous donne* un beau trépas !’
 - (c) Mais le temps *‘passe*. Encore un équinoxe affreux ! 5
Et les marins du port, un jour, causant entre eux,
Tout comme l’an dernier, sur la mer en délire
Viennent, de signaler un malheureux navire—
Un brick, cette fois-ci, qui touche le récif.
A chaque lame, il fait de sursaut convulsif
Qu’on pourrait appeler le râle du naufrage.
2. (a) Who are, respectively, the authors of the above extracts ? 10
Write a short biography of any one of them.
- (b) Parse *fully* the four italicized words. 4
- (c) Give the principal parts (*temps primitifs*) of :—*assis, naître* 4
(b) ; *viennent, fait* (c).
- (d) Point out some rules for the formation of the plural in compound nouns. 5

3. Translate :—

(a) *Comme* la plaisanterie commençait à devenir monotone, on s'éloigna peu à peu de notre ami, un reconnaissant ses talents pour la danse de corde, mais en le déclarant fort insipide dans la conversation. Bientôt trois ou quatre personnes à *peine* s'occupèrent de lui ; une heure *après* ; il était complètement oublié ; ainsi passe la gloire du monde.

(b) Le capitaine Pamphile rechargé tranquillement son fusil, tira son couteau de sa poche, retourna le tigre sur le dos, lui fendit la peau sous le ventre, et le dépouilla comme une cuisinière *fait* d'un lapin. Ensuite il s'affubla de la fourrure de sa victime, comme l'avait fait, quatre mille ans auparavant, l'Hercule nôméen, dont, en sa qualité de Marseillais, il avait la prétention de descendre ; puis il se remit en chasse.

(c) Le surlendemain à l'heure du dîner, on vit *entrer*, dans la salle à manger, Pritchard, avec son plumet au vent et ses yeux *montarde*, pleurant de satisfaction. Cette fois on ne battit point Pritchard, on ne le reconduisit point. On attendit *que* Vatrín arrivât, pour établir un conseil de guerre qui jugeât Pritchard déserteur pour la quatrième fois.

(d) Si monsieur veut descendre, il verra. Je suivis Michel, et, en effet, au milieu du bivac des quatorze chiens, couchés chacun à son caprice, Portugo et Pritchard semblaient débattre une question de la plus haute importance. Cette question *débatue*, Pritchard et Portugo se séparèrent. Portugo sortit par la porte, suivit le chemin du haut Marly qui contournait la propriété, et disparut. Quant à Pritchard, *en* chien qui a du temps devant lui, il se mit à suivre *au pas* le petit sentier qui, longeant l'île, montait au dessus de la carrière.

(e) Enfin, messieurs, j'en appelle à votre justice : lorsqu'on a créé un nouveau mot pour excuser le crime chez l'homme, c'est-à-dire chez cet animal à deux pieds et sans plumes, doné du libre arbitre, la 'monomanie ;' lorsque, grâce au mot, on a sauvé la tête des plus grands criminels, n'admettez-vous pas que le malheureux et intéressant Mysouff a cédé non seulement à des instincts naturels, mais encore à des suggestions étrangères ?... J'ai *dît*, messieurs.

4. (a) Parse fully the twelve italicized words in Question 3.

(b) Frame short sentences with *après* used as a preposition ; *que*, as a pronoun ; *dire*, as a noun.

(c) Give the principal parts of *s'éloigner*, *sortir*, *croire*, *rendre*. What rules are followed in the formation of tenses from the *temps primitifs* ?—Conjugate *longer* in the Present Subjunctive.

FRENCH TRANSLATION AND COMPOSITION.

Paper set by—MISS KATE RAYMOND.

Examiner—REV. FATHER E. FRANÇOTTE, S.J.

The figures in the margin indicate full marks.

1. Translate into English :—

(a) La jeune fille eut le courage de suivre le convoi (*funeral procession*) au cimetière ; mais lorsqu'elle revint, ses forces étaient brisées et son courage à bout. Arrivée près du seuil, elle hésita à le franchir.

Tricot et sa femme, qui étaient déjà rentrés, avaient commencé l'inventaire de ce qui allait leur appartenir : les armoires étaient ouvertes, les meubles en désordre. Rose sentit son cœur se serrer et s'assit sur le banc de pierre dressé près de la porte. Les mains jointes sur ses genoux et la tête baissée, elle laissait couler ses larmes silencieusement. Une voix qui la nommait lui fit relever les yeux : elle reconnut M. Fournier.

(b) Le Pape entra seul, Bonaparte se hâta de refermer la porte derrière lui, avec une promptitude de géolier. Je sentis une grande terreur, je l'avoue, on me voyant en tiers avec de telles gens. Cependant je restai sans voix et sans mouvement, regardant et écoutant de toute la puissance de mon esprit. 6

(c) L'heure de la récréation était heureusement arrivée. Bientôt tous les enfants furent dehors, caressant et admirant Fidèle. Celui-ci se laissait faire, rendait aux enfants leurs caresses et gambadait avec plaisir. La bonne vieille maîtresse d'école vint aussi l'admirer et le caresser ; elle se demanda d'où il venait, à qui il pouvait bien appartenir ; ni elle, ni aucun des enfants ne se souvenaient de l'avoir jamais vu. 6

2. Translate into French : —

(a) 'I am delighted to see you again,' said an old lion, who pretended to be ill, to an old fox. 'Come in, come in ; it is very comfortable in my den (*antre*).—'I am extremely flattered by your invitation,' replied the cunning (*rusé*) fox, 'but it is impossible for me to accept it.'—'Why so?'—'Because I see many footsteps which point (*regarder*) inward, but not one that points outward.' 6

(b) Where do you come from ?—I have been for a walk along the river.—How far did you go ?—Only as far as the red brick house on the left-hand side of the road.—That is a long way off, is it not ?—Not more than three miles. 2

(c) Your music teacher has been waiting for you ever so long. —What for ? He only comes on Tuesdays.—Yes, but he told me you had arranged last time to have your lesson to-day instead of to-morrow. —So we did. 3

3. Write in French a short letter to a friend, describing some French book you have read. 10

SANSKRIT TEXT AND GRAMMAR.

Paper-Setters—{ RAI RAJENDRA CHANDRA SASTRI, BAHADUR, M.A.
BABU KALIPRASANNA BHATTACHARYYA, M.A.
,, ASUTOSH SASTRI, M.A.

Head-Examiner—BABU KALIPRASANNA BHATTACHARYYA, M.A.

Examiners—{ BABU JOGENDRANATH BHATTACHARYYA, M.A.
,, JANAKINATH BHATTACHARYYA.
,, RAJANIKANTA CHATTERJEE, BIDYABHUSHAN, B.A.
PANDEYA UMAPATI-DATTA SARMA, B.A.
BABU PADMANATH BHATTACHARYYA, M.A.
,, YOGESCHANDRA SASTRI, M.A.S.B.
,, DURGADAS BHATTA, M.A.
,, BANAMALI CHAKRABARTI, M.A.
,, KUMUDBANDHAB CHATTERJEE, M.A.
,, MADHUSUDAN RAO (*Examined answer papers written in Uriya*).

The figures in the margin indicate full marks.

1. (a) हिरण्यकल्पु तद्वचनं श्रुत्वा प्रत्यभिज्ञाय ससंजमं बहिर्निःसत्या-
ब्रवीत् । आः पुण्यशान्तिं प्रियसुहृन्मे चित्रश्रीवः समायातः ॥

(b) काको ब्रूते । मित्र अकस्मादागतुना सह मैत्री न युक्ता । तद्ग
भद्रमाचरितम् ॥

(c) ततः प्रभृति तयोरन्योन्याहारप्रदानेन कुशलप्रश्नेर्विश्रमालापेक्ष कियान्
कालोऽतिवर्तते ॥

(d) ततोऽस्मत्पुण्योदयादनेन मित्रेणाहं सौहानुसृत्यानुसृहीतः । अगुना
च पुण्यपरंपरया भवदाश्रयः स्वर्ग इव मया प्राप्तः ॥

(e) कायः सन्निहितापायः संपदः पदमापदाम् ।

समागमाः सापंगमाः सर्वमुत्पादि भङ्गुरम् ॥

(1) Translate the above extracts into English. 12

(2) State the rules of *sandhi* which apply to प्रियसुहृन्मे and स्वर्ग 2

एव ; and give the feminine form of कियान् .

(3) Expound the *amāsas* in the underlined words in extract (c). 2

(4) Give the plural form in the *prathamā vibhakti* of the base of 2

निवेद्य, and parse पुष्पपरंपरया in extract (d), and पदम् and सर्वम् in extract (c).

(5) Derive अनुमृहीतः and अन्नवौत्, and give the third persons of their roots in *lat*. 3

2. इति स राजा कश्यपं महायशा विलप्य दुःखोपहतेन चेतसा ।
गतासुकस्यः सहसेव मूर्च्छितः पपात भूयोऽपि वृषासनात्ततः ॥

(a) Turn the above *śloka* into prose order, substituting Sanskrit equivalents for all the words used in it. 4

(b) Give the plural forms of the bases of महायशा and चेतसा in the *prathamā vibhakti*, and expound the *saṃāsa* in गतासुकस्यः What would be the form of विलप्य if वि were omitted? 3

(c) Parse भूयः and वृषासनात् . 1

3. कर्तव्यः संचयो नित्यं कर्तव्यो नातिसंचयः ।
अतिसंचयशीलोऽसौ धनुषा जम्बुको हतः ॥

Give in your own words in Sanskrit the story alluded to in the above couplet. 4

4. न धर्मशास्त्रं पठतीति कारणं न चापि वेदाध्ययनं दुरात्मनः ।
स्वभाव एवात्र तथातिरिच्यते यथा प्रकृत्या मधुरं गवां पयः ॥

(a) Give the purport of the above *śloka* in English. By whom and on what occasion was the above speech made? 3

(b) Parse पठति, वेदाध्ययनम्, and प्रकृत्या in the above *śloka*. 1

(c) Give the singular forms of the base of गवाम् in the *dvitīyā* and the *śaṣṭhī vibhakti*. 1

5.

(a) तथा सुमन्त्रेण हितार्थवादिना निवार्यमाणाऽपि सती सुतप्रिया ।
न विप्रलापाद्विरराम दुःखिता नरेन्द्रपत्नी प्रियपुत्रलालसा ॥

(b) निश्चयं तल्लक्षणाभावात्वाक्यं रामस्य मातुर्नरेवपत्न्याः ।
शनेः स शोकः प्रशमं जगाम वृष्ट्या यथाग्निः परिषिच्यमानः ॥

(c) समानपलः पृथिवीपतिः पिता भवेत्पितुः पुत्रशतं तवाशया ।
कुलस्य संतानकरं च यद्भवेत्तृतीयमेतद्वरयामि ते वरम् ॥

(1) Explain (a) in Sanskrit. 4

(2) Account for the cerebral च in निवार्यमाणा . 1

(3) Expound the *saṃāsa*s in हितार्थवादिना, सुतप्रिया, लक्षणाभावात्वाक्यम्, नरेवपत्न्याः, and यमपत्यः . 4

(4) Account for the cerebral च in परिषिच्यमानः . 1

(5) In what case is विप्रस्थापात्, and why? 2

(6) State the rule of sandhi which applies to the expression च शोकः . 1

(7) Decline the word इष्टिबोपति in the singular number of the sixth case (*ṣaṣṭhī vibhakti*), and the base of सप्तम्या in the plural number of the seventh case (*saptamī vibhakti*). 1

(a) स मे सुतश्च शक्तोऽपि धर्मं प्रति सुदुर्बलः ।

अतः स्वकाममुत्सृज्य मां च त्यक्त्वा वनं गतः ॥

(b) द्विजातिभिरयं धर्मः शास्त्रदृष्टः सनातनः ।

गुरोर्दुष्टान्महाराजं गौरवं विनिवर्तते ॥

(c) इमं निष्फलसारम्भं कौवलानर्थसंहितम् ।

विद्वान् कः बाधु मन्यते शिष्येणैव गुरोर्बधम् ॥

(d) इदं मे वचनं श्रुत्वा भर्तुरन्वेषणं कुरु ।

देवतानां यथा वाच्यो न स्यां वत्से विधेहि तत् ॥

(1) Refer to the context and give the sense of the above *śloka* in your own words in Sanskrit. 10

(2) Account for the case-endings (*vibhakti*) in the underlined words in the above extracts. 2

(3) Decline the bases of इमम्, विद्वान्, and कः in the seventh case (*saptamī vibhakti*) in the masculine and feminine genders. 2

(4) Conjugate the roots of विद्वान् and व्याम् in *loṭ* second person singular in the active voice, and give the *lan* and *lrit* forms of the roots of त्यक्त्वा and श्रुत्वा in the third-person singular in the active voice. 3

7. Correct the following, giving the reason in each case:— 5

(a) सर्वमेतत् मम न रोचति ।

(b) लक्ष्मीमन्तो पुरुषा दरिद्रान् बहुं धनं ददन्ति ।

(c) सर्वे प्रजाः दशरथस्य मृत्युमाकर्णयित्वा रोदयामासुः ।

(d) भवन्तरुपजताकार्यान् ।

(e) काष्ठो नौका क्रियन्ते ।

8. Translate into Sanskrit:— 6

'Then the king mounted an elephant, and accompanied by his queens set out with his ministers. And when he left Kausāmbī the citizens followed him with their wives, children, and aged sires, crying aloud. The king comforted them by saying to them, "Gopālaka will take care of you," and passed on to Mount Kālinjara.'

BENGALI TEXT AND GRAMMAR.

PROSE AND POETRY.

Paper set by— { MAHAMAHOPADHYAY HARAPRASAD SASTRI, M.A.
PANDIT SIBANATH SASTRI, M.A.

Examiner—RAI SAHIB HARANCHANDRA RAKSHIT.

The figures in the margin indicate full marks.

1. Translate into English :—

8

রাম ভরতের কথায় সম্মত হইলেন এবং তাঁহাকে সম্মেহে আলিঙ্গন করিয়া কহিলেন, বৎস ! আমি ও জানকী আমরা তোমায় দিয়া দিতেছি, তুমি জননী কোশল্যাকে রক্ষা করিও, তাঁহার প্রতি কদাচ রুষ্ট হইও না, এই বলিয়া তিনি সজল নয়নে তাঁহার প্রতি চাহিয়া রহিলেন।

অনন্তর শুলীল ভরত, ঐ উজ্জ্বল পাত্ৰকা এক মাতঙ্গের মস্তকে অবস্থানপূর্বক রামকে প্রদক্ষিণ করিলেন। তখন ধর্ম্মে হিমাচলের স্তায় অটল রাম, কুলশুক বশিষ্ঠকে যথোচিত অর্চনা করিয়া, অহুক্রমে ভরত ও শকুন্তকে এবং মন্ত্রী ও প্রকৃতিগণকে বিদায় দিলেন। ঐ সময় তদীয় মাতৃগণের কণ্ঠ বাস্পভরে অবকঙ্ক হইয়াছিল, তন্নিবন্ধন তাঁহার। আর বাক্যস্ফুর্তি করিতে পারিলেন না। রামও তাঁহাদিগকে অভিবাদন করিয়া রোদন করিতে করিতে পর্ণকুটীরে প্রবেশ করিলেন।”

2. Explain fully, giving the context in each case :—

15

(a) আত্মীয়স্বজন ও বন্ধুবান্ধবকে বিনাশ করিলে, যে সমস্ত দ্রব্যের অধিকার সম্ভব, আমি বিষমিশ্রিত অগ্নের স্তায় তাহা কদাচ প্রতিগ্রহ করিব না।

(b) এক্ষণে তুমিও এই তপোবনে তপোহুষ্ঠান কর; অচিরেই মহর্ষি কৃষ্ণদেপায়নের প্রসাদবলে সিদ্ধিলাভ করিয়া অনার্য্যে গান্ধারীর সহিত ঐ সকল মহাত্মার শালোক্যালাভে সমর্থ হইবে।

(c) এক্ষণে আমি নিশ্চয় বুঝিলাম, হতাশনের তুলা অকৃতজ্ঞ ও কৃতজ্ঞ আর কেহই নাই।

(d) তৎপরে, আর কোন ব্যক্তি, কখনও, নিউটনের কীর্তিবিলোপের চেষ্টা করেন নাই!

(e) শুলীকিত ব্যক্তি বুদ্ধিবৃত্তি মার্জিত ও বর্দ্ধিত করিয়া পরম পবিত্র শ্রুত-স্মৃতিদ্বয়ে যেরূপ পরমাত্মত পরিপূর্ণ জ্ঞানার্ণবে বিচরণ করেন, অশিক্ষিত ব্যক্তি স্বপ্নেও একবার তথায় পদার্পণ করিতে পারগ হয় না।

3. Explain fully the meaning of the following :—

18

ঈশ্বরীরে পরিচয় কহেন ঈশ্বরী ।
 বুঝহ ঈশ্বরী আমি পরিচয় করি ।
 বিশেষণে সবিশেষ কহিবামেপারি ।
 জানহ স্বামীর নাম নাহি ঘরে নারী ।
 গোত্রের প্রধান পিতা মুখবংশ জাত ।
 পরম কুলীন স্বামী বন্দ্যবংশ খ্যাত ।
 পিতামহ দিল মোরে অন্তর্পূর্ণ নাম ।
 অনেকের পতি তেঁই পতি মোর বাম ।
 অতি বড় বৃদ্ধ পতি সিদ্ধিতে নিপুণ ।
 কোন গুণ নাহি তার কপালে আশুন ।
 কুকথায় পঞ্চমুখ কণ্ঠভরা বিষ ।
 কেবল আমার সঙ্গে হৃদয় অহর্নিশ ।
 গঙ্গা নামে সত্য তার তরঙ্গ এমনি ।
 জীবন গঙ্গাপাশে স্বামীর শিরোমণি ।
 ভূত নাচাইয়া পতি ফরে ঘরে ঘরে ।
 না মরে পাষণ বাপ দিলা হেন বরে ।
 অভিমানে সমুদ্রেতে ঝাঁপ দিলা ভাই ।
 যে মোরে আপনা ভাবে তারি ঘরে যাই ।

4. Explain the following extract in your own words in Bengali, and describe the *utsava* in full as given in your text :— 8

আগে সে কিরূপে বাসবে তুষিতে
 বিধি, হরি, হর অমর-পুত্রীতে
 আসিতেন স্মৃথে—আসিতেন উমা,
 রাগ-মাতা বাণী, রমা পদ্মালয়া
 ইন্দ্র উৎসব যে দিন স্বরে ।

5. Parse—স্মৃথে, আগে, কিরূপে, বাসবে and স্বরে । 5

Parse all the words in the following :—

তাহা কদাচ প্রতিগ্রহ করিব না ।
 কেহ কৌত্তিবিলাপের চেষ্টা করেন নাই ।

6. How many *kāraḥas* are there in Bengali and what are the *vibhaktis*? What are the appropriate *vibhaktis* for different *kāraḥas*? Are *vibhaktis* used anywhere except in *kāraḥas*? If so, under what circumstances? 10

7. কেহিও অধ্যয়নকালে, নিউটন, আলোক পদার্থের তত্ত্বনির্ণয়ার্থে 6
সাতিশর বস্ত্রবান্ হইয়াছিলেন।

Describe fully the result of that effort.

8. Give the purport of the following in your own words :—

5

তিনি বাসনা-বশে চন্দ্র-মণ্ডলে উপনীত হইয়া উচ্চ পর্য্যন্ত, গভীর
গহ্বর, উন্নত শিখর, গিরিচ্ছায়া, বজ্র-ভূমি ইত্যাদি অবলোকন করিতে
পারেন। ক্রমশঃ উচ্চমিকে উত্তীর্ণ হইয়া চন্দ্র-চতুষ্টয়-পরিবৃত্ত বৃহস্পতি,
বৃহস্পতি চন্দ্রাষ্টক ও বিশাল বলয়জয়-পরিবেষ্টিত শনৈশ্চর, ছয়-চন্দ্রসহস্রত
হর্শেল গ্রহ এবং চন্দ্র-সম্বলিত নেপ্চুন-নামক অপূর্ব ভুবন দর্শন
করিয়া পরম পুলকিতচিত্তে বিচরণ করিতে পারেন।

ARABIC TEXT AND GRAMMAR.

Paper-Setters—{ SHAMS-UL-ULAMA MIRZA ASHRAF ALI.
R. F. AZOO, ESQ.

Examiner—SHAMSUL-ULAMA MIRZA ASHRAF ALI.

The figures in the margin indicate full marks.

1. Translate into English :—

A.

12
حكى عن الواقدي رح مما شغفت به الكتب - قال كان
ابراهيم بن المهدي اخو هارون الرشيد ادعى الخلافة بالري بعد
موت اخيه في زمن ابن اخيه امير المؤمنين المأمون - ومكث
مالكا للري نحو ثلثين شهرا - ثم دخل المأمون الى الري -
فاخفى عنه ابراهيم المذكور - فجد في طلبه - وجعل لمن اتاه به
مائة الف درهم او دينار - فقال ابراهيم فغفقت على نفسي
وتعيرت في امري - وضاق علي الارض - فما ادري اهل
اتوجه - فخرجت من داري متذكرا وقت ظهيرة - وكان يوما
صائفا شديدا الحر - ف وقعت في طريق غير نافذ - فقلت
إنا لله وإنا إليه راجعون - قد عرضت نفسي للعطب - ان
عدت على اثرى يرتاب في امري *

B.

7

فلما أصبحت مضيت إلى قهرمانه - فقبضت منه المال -
 قلت إن الفضل حربي بقول أبي تمام * * شعر *
 هو البحر من أي. النواحي أتيته
 فلجنته المعروف والجود ساحله
 جواد إذا ما جئت للجود سائله
 حباك بما تحوى عليه انامله
 و لو لم يكن في كفه غير روحه
 لجاد بها فليتنق الله سائله

2. (a) Explain (in English or Urdu) the last two verses in the above extract, and write out the تركيب of them according to Arabic grammar. 6

(b) Parse نعو ثلثين شهرا and say for what different meanings the word نعو is used. 1

(c) Who is الفضل mentioned in extract B, and what do you know about ابو تمام ? 2

3. (a) Give the صيغة باب - and نعليل of :— 2

قَلَيْتَ and اَخْتَفَى , يَرْتَابُ , اَدْعَى .

(b) How is امر مجهول formed ? Inflect the امر of وَقَعَ and ادعى. 2

4. (a) Give the singular or plural, as the case may be, of :— 4

نواحي and لُجَّة - يد - فُرُش - كيزان - كف - انامل - ساحل

(b) Point out the cases in which the letter ت of افتعال is changed. 2
 Name the letters into which it is changed, and give examples.

5. Translate into English :— 16

با طالب الدنيا الدنية انها
 شرك الردى و قرارة الاكدار
 دار متى ما اضحكت في يومها
 غدا - تبأ لها من دار

غاراتها لا تنقضي واسيرها
 -دى بجلائل الاخطار
 كم مزدهى بغورها 'حتى بدا
 متمرداً متجاوز المقدار
 قلبت له ظهر المجن واولغت
 فيه المدى ونزت لاخذ الثار
 واعلم بان خطوبها نفجاً ولو
 طال المدى ونزت سرى الاقدار
 فارباً بعمرك ان يمر مضيعاً
 فيها سدى من غير ما استظهار
 وطلابها
 تلقى الهدى ورفاهة الاسرار

6. (a) Write out the whole of the extract in question 5 with full 4
 vowel-signs.

(b) Explain fully the expressions قَلَبَتْ لَهُ ظَهْرَ الْمَجْنِّ and 2
 اَرَباً بِنَفْسِكَ .

اَرَباً بِنَفْسِكَ .

(c) Is there any omission in the phrase اَرَباً بِنَفْسِكَ 1
 ' اَرَباً بِنَفْسِكَ ان يمر مضيعاً
 If so, what is it ?

(d) Account for the جزم in تَلَقَّى in the last verse. 1

7. (a) Write grammatical notes on the words overlined in the above 6
 extract.

(b) What kind of اِضافه is that in بجلائل الاخطار ? Give other 2
 examples of this kind of اِضافه .

8. Translate into Arabic :— 10

A boy once threw himself into a stream of water, and did not know how to swim. And when he was on the point of drowning, he called out for help to a man who was passing by in the road. He came to him, and began to scold him for tumbling into the river. The boy said to him, ' Oh, save me first from death, and blame me as much as you like afterwards ! '

PERSIAN TEXT AND GRAMMAR.

Papers-Setters—{ SHAMS-UL-ULAMA MIRZA ASHRAF ALI.
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Examiners—{ MAULAVI MUHAMMAD KAZIM SHIRAZI.
MAULAVI ABU MUSA AHMADUL HUQ.

The figures in the margin indicate full marks.

1. Translate into English :—

10

وقتی هارون الرشید خوابی دید که عقد مروارید دندان در درج دهان او مشق و رشته پروین اسنان چون بذات النعش متفرق گشته : معبری را بخواند - که تعبیر کن - گفت همه خویشان تو در پیش تو بمیزند - هارون الرشید را این سخن ناپسند آمد بفرمود مجموع دندانهای معبر را بر کشیدند * معبر دیگر طلبید و تعبیر خوابش را خواست - گفت امیرالمؤمنین را عمر دراز باد - در عزت و دولت و خلافت بیش از اقربای خود زندگانی یا بد - امیرالمؤمنین را خوش آمد - هزار دینار بوی داد و گفت این همان معنی دارد و لیکن به پیرایه ادب آراسته است *

سخن را دو رویست در جمله حال
یکی روی خوب و دیگر روی زشت
ازان روی زشتش بددوخ برند
وزین روی خویش بسوی بهشت

2 (a) Explain the metaphor in the passage—

عقد مروارید دندان متفرق گشته

(b) Re-write the following words with their appropriate vowel-points, and give their literal meanings:— 6

بغات الذعش - اقربا - خلافت - معبر - مشقق - عقد

3. Translate into English:— 7

چون سامری بمرض الموت گرفتار شد و صاحب فراش گردید مالک بن حبیب و سایر رفیقان کشتی را حاضر کرده گفت چون همگی خواهش و اراده ام آنست که شعائر دین محمدی در ملیبار رونق و رواج کند شرط رفاقت و مروت مقتضی آنست که حمیت اسلام منظور داشته مشقت دریا بخود قرار دهید و شما و دیگر مسلمانان برسم تجارت بدان دیار رفته مسکن و منزل اختیار نمائید تا بتدریج و مرور مردم آنجا راغب دین محمدی شده سر بعلقه اسلام در آورند *

4. (a) Give the singular or plural of the following:— 3

حال - تاجر - مساکین - رفیق - اسنان - وقت

(b) Re-write the following words, correcting the errors in spelling (if any), and give their plurals:— 5
واری (an heir), سطح (a surface).

وزیفه (pension), عداوت (obedience), زابنه (rule), زکر (mension).

5. Write in Persian a letter (of six or seven lines) to a friend, inviting him to join a garden party at 5 P.M on coming Saturday. 5

6. Translate into English:— 16

ای ز کرم چاره گر کارها * مرهم راحت نه آزارها
روشنی دیدد بینندگان * پردگی پرده نشینندگان
عقد کشایند هر مشکلی * قبله نمایند هر مقبلی
توشه نه گوشه نشینان پاک * خوشه ده دانه نشانان خاک
بازوی تائید هفر پیشگان * قبله توحید یک اندیشگان
شانه زن زلف عروس بهار * مرسله بند گلوی شاخسار

از نم لطفت که هوا ریخته • عقد در از گوش گل آویخته
در دل محرم ز جمالت چراغ • سینۀ محرم ز تو داغ داغ

7. (a) Point out all the مرکب اضافی in the above verses. 2

(b) Write out any two baits that are free from Arabic words in the above extract. 1

(c) Give the signification of the suffixes in— 2

پردگی and مقبلی - شاجسار - چاره‌گر

8. Explain (in English or Urdu), clearing the references:— 5

(a) مگر دور گردونت از یاد برد

که تخت سلیمان چنان باد برد

(b) سطر سیوم نیست بجز چار حرف

درج بهر چار رموز شگرف

هر چه بود در خم طاق سپهر

جمله ازین چار نمودست چهر

9. Inflect the چاغر معروف of ایستادن and کشتن and the 2
فروختن and آویختن of مجهول and نهی حاضر معروف.

10. Translate into Persian:—

It happened about this time that the Sultan Shamsuddin sent a 12
merchant to Bukhara and Samarkand to purchase slaves. He bought
a hundred, and Balban was among them. When the slaves were
brought before the Sultan, they all pleased him except Balban, and
him he rejected on account of his despicable appearance. Upon this
Balban said to the emperor, 'Lord of the world! why have you bought
all these slaves?' The emperor smiled, and said, 'For my own
sake, no doubt.' The slave replied, 'Buy me, then, for God's sake.'
He then placed him among the rest, and gave him a situation among
the cupbearers.

HINDI TEXT AND GRAMMAR.

Examiner—BABU SOMNATH JHARKHANDI, B.A.

The figures in the margin indicate full marks.

1. Translate the following into English :—

10

पिता जनक भूपालमणि, समुर भानुकुल भानु ।

पति रविकुलकैरव विपिन विधु गुणरूप निधान ॥

मैं पुनि पुत्रवधू प्रिय पाई । रूपराशि गुणशील सुहाई ॥

नयनपुतरि करि प्रीति बढ़ाई । राखेउं प्राण जानकिहिं लाई ॥

कखवेलि जिमि बहुविधि लाली । सींचि सनेहसलिल प्रतिपाली ॥

फूलेंत फलत भयउ विधि बामा । जानि न जाइ काह परिनामा ॥

पलंगपीठ तजि गोद हिंडोरा । सिय न दोन पगु अवनि कठोरा ॥

जियनमूरि जिमि जोगवति रहकं । दीपवाति नहिं टागन कहकं ॥

खोइ सिय चलन चहति बन साथा । आयसु काह होइ रघुनाथा ॥

चन्द्रकिरणसरसिक चकोरी । रविरख नयन सके किमि जोरी ॥

गुरुश्रुतिसम्मत धर्मफल पाइय बिनहिं कलेस ।

हठवश सब संकट सहे ^{शुभ} गालव नहुष नरेस ॥

- (a) Parse the words underlined in the above extract. 4½

- (b) Explain the allusions in the last line. 3

- (c) Name the speakers and the persons spoken to in the above. 1½

2. Quote from memory the answer given in your text-book to the following :— 5

भरतश्च य तोहि सत्य कहू परिहरि कपट दुराव ।

हर्ष समय दिखय करसि कारण मोहि सुनाव ॥

3. Derive परिहरि, and conjugate it in the past and future tenses in all its numbers and persons. 3

4. Give the meanings of the following words, and quote the lines of your text-book in which they occur :—बिगोई, कमा, डेई, भासा, बैसाही, दूजे, असमंजस, सका, रौतारै, and सहसि. 8

5. Fill up the omissions in the following :—

8

हरवर्त खेन्सर का नाम पाठकों () होगा महात्मा
() मरे अभी बहुत दिन () । इसे इस समय वैज्ञानिकों
का राजा () चाहिये । देश () शिक्षा () दुर्दशा ()
उस () एक किताब () यह किताब () अच्छी हुई
कि दुनिया भर () भाषाओं में () अनुवाद () ।
पद्मा () पूछा “क्या () आपका परिचय पा () हूँ ।
पथिक ने कहा ” इस अन्वकार में आप इस प्रकार चलती हैं
() जान () है आप () मर्गों से विशेष रूप ()
परिचित हैं ।

6. Explain in Hindi :—

6

सिय राम प्रेम बीयूष पूरन, होत जन्म न भरत को ।
मुनिमन अगम यम नियम सम दम विषम व्रत आचरत को ॥
दुखदाह दारिद दंभ दूषण सुयस मिसु अपहरत को ।
कलिकाल तुलसी से सठहिं हठि राम सन्मुख करत को ॥

What do you understand by यम, नियम, शम, and दम ?

2

7. Give the opposite genders of :—निषादु भिन्न मौन, समाजू करि,
सच्चा, सचिव, and राय .

4

8. Translate the following into English :—

8

तमसा - भगवती गंगाजी ने कहा है “बेटो सीता, आज भैया
कुश लव को बारहवें बरस की बरसगांठ का दिन है, सो आज
अपने कुल के परम पुरखा पवित्र पापनाशन सूर्यदेवता को अपने
हाथ से तोड़े फूलों से पूजा और जब तुम पृथिवी पर चलीगी
तो तुम को हमारे प्रभाव से जनदेवियों भी न देख सकेंगी, मनुष्य की
कोन गिनती है । मुझ से कहा है “तमसा बेटो जानकी तुम को
बहुत चाहती हैं इस से तुम इन को साथ रहो ” । अब मैं भी उन्हीं
को कहने से आई हूँ ॥

Explain the *samāsas* of the words underlined in the above extract. 2

9. Render the following into prose order, and explain in Hindi the story alluded to therein :— 7

जो बाम्हनबाखक सरा ताहि जियावन काज ।
मार दहिन कर बूद्धमुनि पर कृपान यह आख ॥
हुसह गर्भ सौ जो दुखित ताहि निवारयो जोह ।
सोई राम कर अंग तैं, तोहि कृपा किमि होह ॥

10. Give an account, in simple Hindi, of the interview between Bharat and his mother, as related in your text-book. 8

URDU TEXT AND GRAMMAR.

Examiners— { MAULAVI MUHAMMAD MUSTAPHA KHAN,
M.A., B.L.
MAULAVI MAHAMMAD QUASIM.

The figures in the margin indicate full marks.

1. (a) Translate into English :—

10

جو کسی طرف راہ نہائی - ہمیشہ یاد آئی - دست تاسف
ملا - تن تنہا چلا - نہ زاد راحلہ - نہ یار قافلہ - غم و غصہ کھایا -
آپ کو وہاں پہنچایا - ہمیشہ صورت فقیر دیکھ کر روئی - کہا
اے بھائی دولت مفت کھوئی - پھر غذائے لطیف لائی -
پوشاک فاخرہ پہنائی - گئی مہینے رہا - ایک دن ہمیشہ لے
کہا - بھائی - بیکاری باعث بیکداری ہے - دلیل بے ہنری
ہے - سوداگر شام کو جاتے ہیں - تو بھی متاع خرید لا - اونکے
ساتھ جا - پریشانی دور اور فراغت بدستور ہوگی - میں بے
دست و پا کچھ نہ بولا - اوسنے صندوقچہ کھولا - دو سو اشرفی
دی اور تشفی کی - میں نے متاع کفایت لئے لی - اور ایک
معتد کو سپرد کی - قافلہ نے کوچ کیا - میں نے رھکر گھوڑا
لیا - چند روز کے بعد با ساز خوب و لباس مرغوب چلا - دو
منزل طے کر کے جا ملا *

(b) Derive—معتد - منزل - فاخرہ - دلیل - مرغوب - باعث

2. Explain the following phrases :—

6

عقل کے ناخن لو - نہ زاد راجلہ - نہ یار قافلہ - نار کاغذ کی
کب تک بھیگی - کس جگہ تو تو میں میں دافنا کلکل نہیں
ہوتی - بیڑا اُٹھایا - گدھے کا ہل پہر جائیگا *

3. Trace the origin of the Urdu language, and illustrate the changes of style from the writings of poets of different eras.

7

4. Translate the following into English, adding explanatory notes where necessary :—

A.

10

گل پہینے ہے اوروں کے طرف بلکہ ٹمر بھی
اے خانہ برانداز چمن کچھ تو ادھر بھی
اے ابر قسم ہے تجھے رونے کی ہمارے
تپکا تری آنکھوں سے کوئی لخت جگر بھی
اے نالہ صد افسوس جوان مرنے پہ تیرے
دیکھا نہ کبھی تو نے ذرا روے اثر بھی
کس ہستی موہوم پہ نازاں ہے تو اے یار
کچھ اپنے شب و روز کی ہے تجھکو خبر بھی
سودا تری فرباد سے آنکھوں میں کٹی رات
اُٹھی ہے سحر ہونے کو ظالم کہیں مر بھی

B.

تپکا ٹمر نہال امید
ذکا برج حمل سے خورشید
مہتاب کو داغ دے وہ صورت
سورج کو چراغ دے وہ صورت
بچلی کو یہ چوٹ ہو چمک سے
اُتھی سیدھی گرے فلک سے
پیدا جو ہوا وہ دانہ گھر میں
آیا گویا خزانہ گھر میں

ہوئے سے نہال ہو گیا شاہ
تارے نے ہلال کو کیا ماہ
وہ نور تھا یوں اوس انجمن میں
ہو روح لطیف جیسے فن میں
حسرت رہی دیدہٴ حسد کو
پردہ ہوا حسن چشم بد کو

5. Give a short account of the life and writings of مرزا رفیع سودا. 6

6. Parse the following, using the Urdu grammatical terms :— 8

نساخ ہے حوٹائر مضمون کی فکر میں
شہباز تیز پر ہے ہمارا قلم نہیں

7. 'Point out the difference between غزل and قصیدہ; رباعی and قطعہ; مطلع and قطعہ. 6

8. Write in Urdu a letter to your friend, informing him of what you propose to do after the examinations are over. 7

9. Translate into Urdu :— 10

A young widow with two children, a boy and a girl, came to Calcutta from the Mofussil to see what could be done for them. She took service with a rich family as a menial servant, worked with extra zeal to win favour, and succeeded. Her boy was taken in hand by the head of the family, and received an education along with his own children. He benefited by it sufficiently to be able to retain a good appointment which his patron's exertions obtained for him, and was in time able to secure a fortune and position for himself.

URIYA TEXT AND GRAMMAR.

Paper-Setters— { RAI MADHUSUDAN RAO, BAHADUR.
RAI RADHANATH RAY, BAHADUR, M.A.

[*Examiner*—BABU CHATURBHUI PATTANAYAK, B.A.

‡ The figures in the margin indicate full marks.

1. Refer to the context where necessary, explain the following 23 passages and parse the words underlined :—

(a) କାହିଁ ସେ ଅଯୋଧ୍ୟା ଧନ୍ୟା ଯୋଧେନ୍ଦ୍ର ଜନନୀ ?

(b) ଜାତ ହୋଇ ଜାତ ବେଦ ଶ୍ରୀକଣ୍ଠନୟନ, ଦେବଦାସ-ଶିଷ୍ୟ

କଲ ଶମ୍ଭୁରାଜ-ଦତ୍ତ ।

(c) ପ୍ରଳୟ-ଅଶଙ୍କା ଉପୁଜାଇ ସିନ୍ଧୁ-ସଖା ଭଗ୍ନଳ । କରୁଥାଇ
ପୁଣି ଛନ୍ଦିତନ୍ତ୍ର ଗୁଣ-ବୃକ୍ଷେ ଅହାଳ ।

(d) ମାତ୍ର ଯୁଦ୍ଧବୀର ନୁହେଁ ଧର୍ମବୀର, କରୁକା ନୁହଇ କେବେ
ମଣିଷ୍ଠୀର ।

(e) ପ୍ରଜାତନ୍ତ୍ର-ପ୍ରଣାଳୀର ସଫଳତା ପ୍ରଜାମାନଙ୍କ ଯୋଗ୍ୟତା
ଉପରେ ନିର୍ଭର କରେ ।

(f) ମନୁଷ୍ୟ ଉର୍ଦ୍ଧ୍ବ ଶ୍ରେଣୀର ତାରକା-ଖରିଚି ଅସୀମ ମାଳାକାଶ ପ୍ରତି
ଶିଖୋରିଛି ଜଞ୍ଜାମୁ ନୟନର ଦୃଷ୍ଟି ନିକ୍ଷେପ କରି ଅସୁଅଛି
ଏକ ତତ୍ତ୍ବାନ୍ତର ଲଭିବା ପାଇଁ ବୁଝାଣ-ବୁଦ୍ଧ ଅଗାଧ-
ସମୁଦ୍ର ମନ୍ଥନରେ ଅପଣାକୁ ବ୍ୟାପ୍ତ କରିଅଛି ।

2. Name and expound the Samasas in ସୁକ୍ତୋଦନିର୍ଦ୍ଦେଶ, ପ୍ରକାଳ- 10
ପାଟଳାଲେକ, ନିରୁପମରୂପପ୍ରଭା, ପ୍ରତ୍ୟହ, ଅକର୍ଷି, ବୈଲେକ୍ୟ, ଶ୍ରୀମ୍ଳାନ ।

3. Write etymological notes on ପେଡ଼ି, ଠିଆ, ମାଟି, ଶୁମ୍ଭ, ପକ୍ତି, 15
ଭଣ୍ଡାର, ଗହଳ, ଗୋଠ, ମହମା, ବର୍ଣ୍ଣାୟାନ୍, ଜଞ୍ଜାସା, ମୁଗ୍ଧ ଦେବୀ-
ମାନ, କନିଷ୍ଠ, ତାବୁଣ ।

4. Give a short sketch in Uriya of the life and character of 10
Asoka.

5. Quote from memory any eight lines from ମଦନଦହନ । 4

6. Point out and illustrate the distinction between କର୍ମଧାରୟ 8.
and ବହୁବ୍ରୀହି and give five examples of ତତ୍ତ୍ବପୁରୁଷ compounds com-
posed of purely colloquial Uriya words.

7. Give the substance in English of the essay on ଗତି in 'Pra- 10
bandhamala.'

ASSAMESE TEXT AND GRAMMAR.

Paper-Setters— { BABU PADMANATH BHATTACHARYYA, M.A.
PANDIT GAURIDATTAMISRA BIDYABHUSHAN,
M.R.A.S.

Examiner—RAI MADHABCHANDRA BARDOLAI, BAHADUR.

The figures in the margin indicate full marks.

1. “আনন্দৰাম বৰুৱা অসমীয়াৰ আৰ্হি, পথ দেখাওঁতা”—how has this statement been illustrated in your text-book? 5

2. Explain :—

(a) পৰিণামদৰ্শিতাৰ বলত ৰাজসম্মানো পাব পাৰিব পাৰা, জগতকো জয় কৰিব পাৰা, কিন্তু যথার্থ সজ্জ কাম কৰি, সজ্জ কাম কৰাৰে কলস্বৰূপ যিটো নিশ্চল সন্তোষ আমি লভোঁহক, সেই সন্তোষ এনে ছুটিঠেঙীয়া আত্মশিক্ষাৰ পৰা হব নোৱাৰে; হৃদান্ত মনক পৰমেশ্বৰৰ চৰণে ন দমালে দমাওঁতা নাই। 6

(b) শেষত স্বামীৰ চরণ চিন্তি জয়মতীয়ে এদিন সেই পাপাত্মাপূৰ্ণ স্বপ্ননীয় সজ্জ পৰিত্যাগ কৰি নশ্বৰ দেহ এৰি, চিৰস্বৰণীয় কীৰ্ত্তি ৰাখি, আহোমসকলৰ নাম পবিত্ৰ কৰি, পৃথিৱীত নাবীসকলক পতিপ্ৰাণতৰ উদাহৰণ দেখুৱাই বৈকুণ্ঠ ধামলৈ গৈ, দময়ন্তী সাবিত্ৰীৰ স্থান অধিকাৰ কৰিলে। 6

(1) What do you know of the origin of the Ahoms? 2

(2) Write briefly what you know of দময়ন্তী and সাবিত্ৰী 4

3. Translate into English :— 5

মূলতে সকলো বস্তু প্ৰায় একে; ক্ৰিয়া আৰু গুণভেদে বেলেগ বেলেগ শৰীৰত বেলেগ বেলেগ ক্ৰিয়া আৰু গুণবিশিষ্ট হয়। যি জনা পুৰুষে এই দৰে এই অসীম ব্ৰহ্মাণ্ডত সকলো বস্তুকেই পৰস্পৰ পৰস্পৰৰ উপযোগী কৰি সৃষ্টি কৰিছে, অসামঞ্জস্যত সামঞ্জস্য দেখুৱাইছে, সেই জনা পুৰুষৰ শক্তি আৰু মহিমা কেনে অসীম!

4. Give the explanatory meaning of— 8

“প্ৰটোপ্লেজ্‌ম”; “প্ৰাকৃতিক নিৰ্ৰূচন”; “ক্ৰমিক অভি-
ব্যক্তি”; “কাঁড়ী পাইক”।

5. (a) What are the good and the evil effects of অলভাৰ on
সাৱিত্ৰী? 4

(b) Explain the nature and function of উপমা. Name the stock objects to which the eye, the thigh and the complexion of the human beings are compared in ordinary poetry. 7

6. Explain with reference to the context :—

(a) সমস্তে বাকস ভঙ্গ হোৱে য়েবে
শাপৈ ধৰি কবি কষ্ট। 4

ন লপন্ত ক্ৰোধ উপজিয়া মৰে
তপত্ৰত হোৱে নষ্ট।

(b) শালবৃক্ষ সদৃশ মেলিয়া দুই বাহ। 4
সূৰ্য্যক চাকিবে যেন খেদি যায় বাহ।
বামক দেখিয়া ভীম ভেজিলা আটাস।
ত্ৰৈলোক্যৰ লোকৰ লাগিল মহাত্ৰাস।

(c) ধৰ্ম্ম এৰি অধৰ্ম্ম কৰয় যিতো নব। 4
তাক দণ্ড কৰিবে লাগয় ক্ষত্ৰিয়ৰ॥
ব্রাহ্মণত জন্ম ধৰ্ম্ম ধৰিছা ধৰিব।
তাক এৰি ধৰ্ম্ম কেনে আচৰা ক্ষত্ৰিব॥

Name the metro in the extract (a) above.

7. Explain in English :—

(a) বৰষা অনন্ত কাল জ্ঞানৰ পোহৰ 5
জ্যোতিৰ্ময়ী জোনাকী সবিতা।
বজোৱা অনন্তকাল পঞ্চমত ছলি
বীণাপাণি কোমল কবিতা।

(b) মহা মহা পুৰুষৰ চানেকীৰে জীবনৰ 4
আমিও কৰিব পাৰো জীৱন গঢ়িত।
অভিনয় শেষ হলে, জীৱনৰ অন্তকালে,
খই যাব পাৰো খোজ সময়-বালিত॥

Can you quote the original English stanza, of which the extract (b) above is a paraphrase? 3

8. (a) Name the Sanskrit words from which the following Assamese words are derived :— 2

আৰ্হি ; সজ ; আটাস ; জোনাকী .

(b) Name and expound the Samasas in the following words :— 5

বৰ্ণাৰ্থ ; পাপাত্মাপূৰ্ণ ; পৰম্পৰ ; বীণাপাণি ; সময়-বালি .

(KHASI TEXT AND GRAMMAR.

Examiner—REV. J. JONES.*The figures in the margin indicate full marks.**Time*—3 hours. *Max.*—80.

1. Iathuh kaba phi tip shaphang Ka Rahab* 5
2. Kaei ka pop U Akhan ? Ká jingshitom aiu u la shah lem 5
bad la ka jong ka ing ?
3. Katno tylli ki nongbah la aihá Ki Lebi ? ,Katno tylli na ki ki 6
long ki shuong jaka rih ? Iathuh ia ki kyrteng ki shnong jaka rih.
4. Uei U Sisera ? Kiei kiba ialeh bad u ? Da kumno u la iap ? 6
5. Jephthah u la kular aiu ha U Trai lada u'n ai noh ia ki khun U 6
Ammon ha ka kti jong u ? U la pyndep ne em ia la ka jingkular ?
6. Uegi uba kren ia kane ka jingkyntip ?—Na u nongbám la mih 6
ka jingbám, bad na u bakhlain la mih ka jingthiang. Kaei ka jingba-
tai jong ka ?
7. Iathuh ia ki kyrteng ki lai-ngut ki lok U Job kiba la iawan ba'n 4
ngowisynei lem, bad ba'n pyntyngen ia u.
8. Kumno ki lok jong u ki la iapyrkhat shaphang jong u haba 12
u la shah katta katta na ka kti U Blei ? Ka jingpyrkhat jong ki ka
long ka badei ne ka b'ymdei ? Pynskhem ia la ka jubah.
9. " U Trai u la ai ha U Job arshah ia kaba u la don myushiwa " 6
—Katno u la don mynshiwa, bad katno u la don hadin ?
10. Pynkylla ia kine ki senten ha ka ktín Pherong— 8
(1) " U gadda khlaw u jiu pah haba u don phlang " ?
(2) " Lah ne em ba'n bām ia ka bablād khlem ka mluh " ?
(3) " Naba u pynmong ma-u, bád u spain ma-u."
(4) " To ieng joit ; balei me háp dem la ka khyrat kumue " ?
11. *Parse* ia ki ktín ha kane ka dykhot—" Bad U Joshua u la ong, 10
Wah ! Ah Trai U Blei, balei ba mé shu wallam ia une u paitbah sha
shiliang Jordan, ba'n ai noh ia ngi ha ka kti Ki Amor, ba'n pynjot
ia ngi ? Ah ba'n da ngi la shu hun, ba ngi'n da shong ruh sha lyndet
Ka Jordan "
12. Thoh hinriw tylli ki *adjective*, hinriw tylli ki *adverb*, bad hinriw 6
tylli ki *preposition*.

PALI TEXT AND GRAMMAR.

Paper set by— { HARINATH DE, ESQ., M.A. (*Cal. and. Cantab.*),
M.R.A.S.
MAHAMAHOPADHYAY SATISCHANDRA ACHARYYA,
VIDYABHUSHAN, M.A., M.R.A.S.

Examiner—DHARMANANDA KOSAMBI, ESQ.*The figures in the margin indicate full marks.*

1. Translate into English :— 15
(a) Akataññum akattāraṇa katassa appatikārakam yasmim'
kataññutā n'atthi—niratthā tassa sevnā.

Yassa saṃmukhacinnena mittadhammo na labbhati anusuyyāṃ anakkosāṃ saṇikāṃ tamhā apakkame ti.

(b) Uttamaṅgaruhā mayhāṃ ime jātā vayo harā pātubhūtā devadūtā, pabbajjāsamayo mamā'ti.

(c) Bharukacchā payātānaṃ vāṇijānaṃ dhanesinaṃ nāvāya vippanatthāya Khuramāṇīti vuccatīti.

2. State the nominative of "apakkame" in (a) of question 1. 3
What is the modern name of "Bharukaccha" in (c)? Parse "mayham" in (b).

3. Translate into English :—

30

(a) Atīte Bārāṇasīyaṃ Brahmadatte rajjaṃ kārente Bodhisatto sasayoniyaṃ nibbattitvā āraññe vasati. Tassa pana araññassa ekato pabbatapādo ekato nadī ekato paccantagāmaiko. Aparo pi'ssa tayo sahāyā ahesurā : makkato sigālo uddo'ti. Te cattāro pi paṇḍitā ekato vasantā attano gocaratthāne gocaraṃ gahetvā sāyaṇhasamaye ekato sannipatanti. Sasapaṇḍito "dānaṃ dātābbaṃ, sīlaṃ rakkhitaṃ, uposathakammaṃ kātābbaṃ" ti tiṇṇaṃ janānaṃ ovādavaseṇa dhammaṃ deseti. Te tassa ovādaṃ sampaticchitvā attano attano nivāsagumbaṃ pavisitvā vasantī.

(b) Evaṃ vutte Mallikarājā ca sārathi ca ubho pi rathā otaritvā asse mocetvā rathaṃ apantvā Bārāṇasirañño maggaṃ adamsu. Bārāṇasirājā Mallikarāñño nāma "idaṃ c' idaṃ ca kāmā vattatīti" ovādaṃ datvā Bārāṇasim gantvā dānādini puñṇāni katvā jīvita-pariyosāne saggapadaṃ pūresi. Mallikarājāpi tassa ovādaṃ gahetvā janapadaṃ pariggahetvā attano agunavādim adisvā va sakanagaraṃ gantvā dānādini puñṇāni katvā jivitapariyosāne saggapadaṃ eva pūresi.

(c) Mātali saṃgāhako tassa vacanaṃ sutvā rathaṃ nivattetvā aññena maggena deva-lokaḥhimukhaṃ akāsi. Asurā pana tam nivat-tayamānaṃ eva disvā "addhā aññeñi pi cakkavālehi Sakkā āgac-chanti balaṃ labhitvā ratho nivatto bhavissatīti" maraṇabhayaabhītā palāyitvā asuraḥhavanam eva pavasiṃsu.

4. What is "uposathakamma" in (a) of question 3? Who is "Mallikarājā" referred to in (b)? Derive "akāsi" in (c). 3

5. (a) Analyse the *sandhi* in the following :—

5

Attho'ti, Buddhānāsānaṃ, etadattho, anveti and accantaṃ.

(b) Decline "sakha" in the accusative case, "rāja" in the dative case, "amha" in the ablative case, and "sabba" in the locative case, masculine gender and singular number. 4

(c) Conjugate the root "bhū" in the past tense (Parokkhā), active voice, singular number. 2

(d) Derive :—*laddho* and *sattā*.

2

6. Narrate briefly the story of "Sumsumāra Jātaka" in English. 8

7. Translate into Pāli :—

8

Revata is a good boy. He loves his brothers and sisters. He never plays with bad boys. He does not tear his books and clothes. He speaks the truth and does what his father, mother or teacher tells him to do.

TRANSLATION AND COMPOSITION.

Paper-Setters— $\left\{ \begin{array}{l} \text{RAI RAJENDRACHANDRA SASTRI, BAHADUR,} \\ \text{M.A.} \\ \text{BABU KALIPRASANNA BHATTACHARYYA, M.A.} \\ \text{,, ASUTOSH' SASTRI, M.A.} \end{array} \right.$

Head Examiner—BABU KALIPRASANNA BHATTACHARYYA, M.A.

Examiners— $\left\{ \begin{array}{l} \text{BABU KULADAPRASAD BHATTACHARYYA, M.A.} \\ \text{,, GOBINLAL BANERJEE, B.A.} \\ \text{,, HARIDAS CHAKRABARTI, M.A.} \\ \text{,, SITALCHANDRA CHAKRABARTI, M.A.} \\ \text{,, BRAJANATH DE.} \\ \text{,, PANCHANAN GHOSHAI, M.A.} \\ \text{,, HARIHAR BANERJEE, M.A.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Translate the following extracts into the vernacular specified in your application:—

(a) 'I have spoken, and I must speak, in very strong terms indeed 12
of the acts done by my opponents; but I will never ascribe those acts to base motives. I will never say they do them from vindictiveness; I will never say they do them from passion; I will never say they do them from a sordid love of office. I have no right to use such words; I have no right to entertain such sentiments: I repudiate and abjure them. I give them credit for patriotic motives; I give them credit for those patriotic motives which are so incessantly and gratuitously denied to us. I believe that we are all united—indeed, it would be most unnatural if we were not—in a fond attachment, perhaps in something of a proud attachment, to the great country to which we belong—to this great empire, which has committed to it a trust and a function given from Providence as special and as remarkable as ever was entrusted to any portion of the family of man. Gentlemen, when I speak of that trust and that function, I feel that words fail me. I cannot tell you what I think of the nobleness of the inheritance that has descended upon us, of the sacredness of the duty of maintaining it. I will not condescend to make it a part of controversial politics. It is a part of my being, of my flesh and blood, of my heart and soul. For these ends I have laboured through my youth and manhood till my hairs are grey. In that faith and practice I will die.'

(b) The autumn of 1897 found him suffering a good deal of pain 8
in his face. It was thought advisable for him to winter abroad, and his old friend Lord Rendel at once placed his villa at Cannes at his disposal. But the sunshine and the blue Mediterranean failed to restore his now-failing health as they had done before. From time to time uneasy rumours circulated. Now it was too cold for his daily drive; now he could no longer read, he was writing nothing; and those who had watched the energetic career of the now veteran statesman felt that his strength must indeed be failing if he had to give up his favourite pursuits. Now news leaked out that he was suffering great pain, and all political differences of opinion were merged in pity for the man who, after a long life of work and toil, must now win his rest through nights and days of weariness.

2. *Subject for original composition in the vernacular of the Candidate.* 20
The respective duties of teacher and pupil.

N.B.—Great attention must be paid to neatness of handwriting, which will be taken into consideration in awarding marks.

HISTORY.

Paper-Setters—{ BABU ADHARCHANDRA MUKERJEE, M.A., B.L.
•,, BINAYENDRANATH SEN, M.A.

Head Examiner—BABU ADHARCHANDRA MUKERJEE, M.A., B.L.

Examiners—{ BABU HEMCHANDRA DE, M.A.
•,, NIRMALCHANDRA BANURJI, M.A.
•,, GIRISCHANDRA MITRA, M.A.
•,, BIRCHANDRA SINHA, M.A.
•,, MOHINIMOHAN DATTA, M.A.
•,, KHAGENDRANATH MITRA, M.A.
•,, KALIPRASANNA BANERJEE, B.A.
•,, MANMATHAMOHAN BASU, B.A.
N. C. MITRA, Esq., M.A.
BABU ISANCHANDRA GHOSH, M.A.

The figures in the margin indicate full marks.

1. What great Hindu or Buddhist emperors ruled in India before the Muhammadan conquest? Mention four, and briefly describe how each distinguished himself in one or more of the following ways :— 6
 - (a) As a hero fighting against foreign enemies.
 - (b) As a patron of learning.
 - (c) As a promoter of religion.
2. Compare the Second Battle of Thaneswar with the Battle of Hastings, and indicate the steps that led to the Muhammadan conquest of Northern India. 6
3. Name some of the distinguished religious reformers who flourished during the Muhammadan period. What was the characteristic of their teaching? What was its influence upon literature? 6
4. Trace the growth of the British Empire in India from the appointment of the first governor-general to the appointment of the first viceroy, by mentioning the important annexations with dates. 6
5. What do you understand by your being a citizen of India, as distinguished from being a citizen of any particular city? How has the British Government made this possible? What are your duties and privileges as a citizen of India? 6
6. Write short explanatory notes on the following :— 6
 - (a) The Indian village has ceased to be a state in miniature.
 - (b) The organization of the District.
 - (c) Emigration and Factory laws.
 - (d) Famine Relief.
7. On what different occasions has England been governed by a queen? State the period of the reign of each. Whom do you consider to be the greatest, and why? Mention three characteristic events in connexion with her reign. 6

8. Give a general outline of the American War of Independence with a special reference to (a) its causes, (b) important battles with dates, and (c) results.

9. Explain in your own language what you understand by each of the following :—The Magna Charta ; The Revival of Learning ; The National Debt ; Catholic Emancipation ; Anti-Corn-Law League.

10. Relate in simple narrative style the story of Joan of Arc.

GEOGRAPHY.

Paper-Setters — { W. H. ARDEN WOOD, Esq., M.A., F.C.S.,
F.R.G.S.
BABU RAMENDRASUNDAR TRIBEDI, M.A.

Head Examiner—W. H. ARDEN WOOD, Esq., M.A., F.C.S.,
F.R.G.S.

Examiners — { J. H. ELLIS, Esq., M.A.
BABU HARICHARAN RAY, M.A.
,, BIRAJMOHAN MAJUMDAR, M.A.
MAULAVI MAHMUD, E.A.
BABU PURNACHANDRA KUNDU, M.A.
,, SASIBHUSAN BASU, M.A.
,, SARATCHANDRA MAJUMDAR, M.A.
,, BAMACHARAN BHATTACHARYA, M.A.
,, HEMCHANDRA DASGUPTA, M.A.
,, KALIDAS MALLIK, M.A.

The figures in the "margin indicate full marks.

1. What is longitude ? Draw a diagram to illustrate your answer. 4
A place on the equator is in long. 10°E. Give the latitude and longitude of its antipodes.
2. Draw a map of India, and mark upon it (a) the meridian of 80°E. and the Tropic of Cancer ; (b) the Vindhya Hills and the Satpura Hills ; (c) the provinces under British administration and their capitals. 6
3. Describe the course of the river Nile, and explain its importance to Egypt. What is the cause of the annual rise of the Nile ? Why is Egypt almost a rainless country ? 5
4. Describe the central highlands of Europe, and the rivers that flow from them. Draw a sketch-map showing the relation of the various mountain systems to one another. 8
5. Describe as accurately as you can the situation of eight of the following towns, and give reasons for their commercial or other importance :—Cawnpore, Dacca, Lyons, Southampton, Constantinople, Vienna, Shanghai, Irkutsk, Mombassa, Sydney, Valparaiso, Chicago. 8
6. 'The whole surface of the land may be looked upon as travelling down to the sea.' Explain clearly this statement.
7. How are rivers fed during the dry season ? Illustrate your answer by examples from Indian rivers. 5
8. Why is the sea salt ? Why is the Dead Sea saltier than the Mediterranean Sea ? 6

Some lakes are freshwater lakes, and some are salt-water lakes. Explain why this should be so, and give two examples of each kind.

9. The volume of ice is one-eleventh greater than that of the water from which it is formed. What is the specific gravity of ice? When ice floats in water what fraction of its volume will be under water?

10. Describe the construction of a thermometer, and show how it is used for the measurement of temperature.

DRAWING.

Paper set by—B. G. GWYTHYER, ESQ.

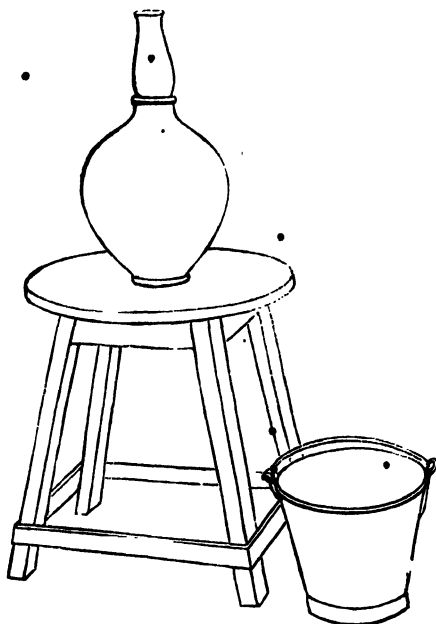
Examiners— { B. G. GWYTHYER, ESQ.
PERCY BROWN, ESQ., A.R.C.A.
T. H. RICHARDSON, ESQ.
BABU ABANINDRANATH TAGORE.

MODEL.

Time—1½ hours. Marks—65.

NOTE.—Candidates must attempt both Freehand and Model. They should begin the Freehand paper first.

Draw the Models so as to fairly fill this paper.

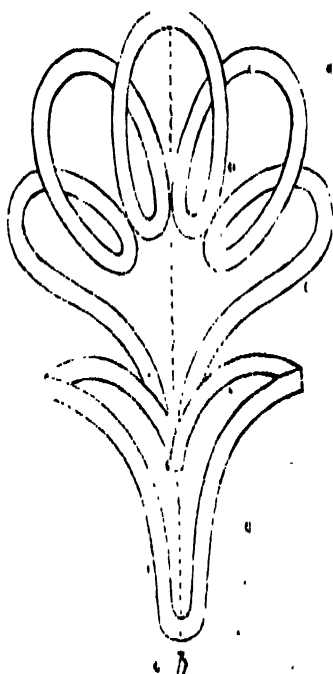


DRAWING.

FREEHAND.

Time—1½ hours. Marks—35.

Draw this diagram in pencil to the height shown by the letters A. B., the width being proportionate. Ruling, Tracing and Measuring are forbidden.



First Examination in Arts.

1907.

ENGLISH.

Paper-Setters— $\left\{ \begin{array}{l} \text{H. M. PERCIVAL, ESQ., M.A.} \\ \text{M. PROTHERO, ESQ., M.A.} \\ \text{J. N. DAS-GUPTA, ESQ., B.A.} \end{array} \right.$

POETRY.

Head Examiner—REV. A. TOMORY, M.A.

Examiners— $\left\{ \begin{array}{l} \text{J. S. ZEMIN, ESQ.} \\ \text{REV. D. E. EVANS, M.A.} \\ \text{BARU LALITMOHAN CHATTERJEE, M.A.} \\ \text{F. W. SÜDMERSEN, ESQ., B.A.} \\ \text{R. L. MAITRA, ESQ., M.A.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Describe from *Paradise Lost*, but as much as you can in your own words :—(a) the Burning Lake, (b) its Shores, (c) Satan, as he lay chained on the lake, (d) Satan, as he stood on the shore, about to address the assembled ranks of his followers. (a)2 (b)2 (c)2 (d)2

2. Describe from Satan's speeches in *Book I* :—(a) the Evil Passions that swayed him, and (b) the means he was contemplating for their gratification. (a)2 (b)2

3. Describe, from what can be gathered from *The Lay of the Last Minstrel* :—(a) the 'Custom of Branksome Hall', (b) the usual incidents in the life of a Moss-Trooper, (c) the particular incidents of the 'Warden Raid' under Lord Dacre and Lord Howard, from the time it crossed the Border up to the conclusion of the Truce before Branksome Castle. (a)2 (b)2 (c)4

4. Name Poems by Wordsworth and quote or give the substance of lines in them that refer to :—(a) his belief or fancy that Nature feels pain and pleasure like Man, (b) his grief at Man's inhumanity to Man, (c) his recognition of unassuming merit, (d) his conviction that material prosperity does not bring happiness. (a)2 (b)2 (c)2 (d)2

5. Give, separately for each passage, (a) the context, and (b) a connected explanation of the whole passage, with separate notes only in the cases they are asked for below :— (a)4½ (b)4½

(a) 'O Prince, O chief of many throned Powers. each)
That led th' imbattl'd seraphim to war (b)22½
Under thy conduct, and in dreadful deeds (2½
Fearless, endanger'd Heav'n's perpetual King ; each)

And put to proof his high supremacy,
Whether upheld by strength, or chance, or fate.

Explain the allusions in the last line.

1

- (b) So soft
And uncompounded is their essence pure ;
Not ti'd or manac'd with joint or limb ;
but in what shape they choose
Dilated or condens't, bright or obscure,
Can execute their airy purposes,
And works of love or enmity fulfil.

Who are referred to in the last line ?

1

- (c) But far within,
And in their own dimensions like themselves,
The great seraphic lords and cherubim
In close recess and secret conclave sat ;
A thousand demigods on golden seats,
Frequent and full.

Explain the difference in meaning between the 'secret conclave' above and the 'great consult' that followed it.

1

- (d) When buttress and buttress, alternately,
Seem framed of ebon and ivory ;
When silver edges tho imagery,
And the scrolls that teach thee to live and die.
- (e) ' Well they knew
In vain he never twang'd the yew.
Right sharp has been the evening shower
That drove him from his Liddel tower ;
And, by my faith,' the gate-ward said,
' I think 'twill prove a Warden-Raid.'
- (f) Of those dread Maids, whose hideous yell
Maddens the battle's bloody swell ;
Of Chiefs, who, guided through the gloom
By the pale death-lights of the tomb,
Ransack'd the graves of warriors old.
- (g) Then, sometimes, in that silence, while he hung
Listening, a gentle shock of mild surprise
Has carried far into his heart the voice
Of mountain-torrents ; or the visible scene
Would enter unawares into his mind
With all its solemn imagery.
- (h) And while my eye
Was fixed upon the glowing sky,
The echo of the voice enwrought
A human sweetness with the thought
Of travelling through the world that lay
Before me in my endless way.
- (i) Hail, blest above all kinds !—Supremely skilled
Restless with fixed to balance, high with low,
Thou leav'st the halcyon free her hopes to build
On such forbearance as the deep may show ;
Perpetual flight, unchecked by earthly ties,
Leav'st to the wandering bird of paradise.

6. Explain :—

14

- (a) No light, but rather darkness visible.
(b) Lie thus astonish't on th' oblivious pool.

(1 each)

- (c) Their wand'ring gods disguis'd in brutish forms.
- (d) Metallic ore, the work of sulphur.
- (e) The tables were drawn, it was idlesse all.
- (f) Exalt the Crescent and the Star.
- (g) Of Gilbert the Galliard a heriot he sought.
- (h) Of Black Lord Archibald's battle-laws.
- (i) They 'gan to reckon kin and rent.
- (j) With trailing pikes the spearmen trode.
- (k) The moving accident is not my trade.
- (l) Thou bringest unto me a tale of visionary hours.
- (m) The good old rule, the simple plan.
- (n) Two voices are there ; one is of the sea.

7. Refer to passages where there are allusions :—(a) in *Paradise Lost*, to the Court of Charles II and to British Parliamentary procedure ; (b) in the *Lay*, to Henry VIII and the Reformation ; (c) in Wordsworth, to Napoleon I (any two allusions). 3

PROSE.

Head Examiner—REV. A. TOMORY, M.A.

Examiners—{ BABU ADITYANATH MUKERJEE, M.A.
 ,, SATISCHANDRA DE, M.A.
 ,, JYOTISCHANDRA BANERJEE, M.A.
 REV. J. BROWN, M.A.
 ,, FATHER POWER, S.J.

The figures in the margin indicate full marks.

1. Describe the condition of Men of Letters, (a) before, (b) after, and (c) at the time, Johnson came to London to enter their ranks. 2,2
2. Illustrate the character of Johnson's intellect as 'a union of great powers with low prejudices,' from his sentiments and opinions on (a) politics, (b) literature, (c) men and manners. 2,2,2
3. State as much as you can, in your own words, what Helps says about—
 - (a) The hope of a future life as an aid to Contentment. 2
 - (b) The qualities to be looked for in an Adviser when we seek for one. 2
 - (c) The formation of principles as a part of the training of a man of business. 2
 - (d) The limits to the interference of principals with the actions of their business agents. 2
 - (e) The proper stage at which any matter should be placed before a Council. 2
 - (f) How we should deal with the prejudices of others, and guard against our own. 2
4. Give, for each of the following :—(a) the context, (b) an explanation of the whole in *unmetaphorical language*, (c) the allusion in the expression in *italics*. 1($\frac{1}{2}$) each 8(4)
 - (i) *The lean kine had eaten up the fat kine.* The thin and withered ears had devoured the good ears. The season of rich harvests was over, and the period of famine had begun. The word 'poet' now 1($\frac{1}{2}$) each

denoted a creature dressed like a scarecrow, familiar with compters and spunging-houses, and perfectly qualified to decide on the comparative merits of the Common Side in the King's Bench prison and of Mount Scoundrel in the Fleet.

(ii) Hope, an architect above rules, can build, in reverse, a pyramid upon a point. When, *like the Fisherman*, you see 'a genie twice as high as the greatest of giants,' you may well wonder how he could have come out of so small a vessel; but in your case there will be no chance of persuading the monster to ensconce himself again, for the purpose of convincing you that such a feat is not impossible.

5. Explain the meaning, in simple language, *divested of allusions*, of the following :—

(a) A fellow who had missed his only chance of immortality by not having been alive when the *Dunciad* was written. 2

(b) The Opposition could reward its eulogists with little more than promises: St. James's would give nothing. 2

(c) He had studied, not the genus *Man*, but the species *Londoner*; and his philosophy stopped at the first turnpike-gate. 2

(d) The reader may well cry out, with honest Sir Hugh Evans, 'I like not when a 'oman has a great peard: I spy a great peard under her muffler.' 2

6. Explain the meaning, in simple language, *divested of metaphors*, of the following :—

(a) In the mind, as in the body, general dwarfishness is often accompanied by a disproportionate size of some part. 2

(b) Few employ their imagination in the service of charity: most persons require its magic aid to gild their castles in the air. 2

(c) It is with advice as with taxation: we do not understand their knocking at our doors: besides they are for ever talking of arrears. 2

(d) But the State will bear much killing. It has outlived many generations of political prophets. 2

7. Write an Essay in English on *one only* of the following subjects :— 25

(a) The formation of Character as the true end of Education.

(b) Man as a Subject and as a Citizen: his duties and his rights in these capacities.

(c) Virtue and Material Wealth—which of them confers Happi-

N.B.—Candidates will take notice that the essay is intended to be a test in ORIGINAL Composition; and that this will be kept in view in awarding marks to their essays.

ARITHMETIC, ALGEBRA, AND GEOMETRY.

Paper-Setters— $\left\{ \begin{array}{l} \text{G. W. KUCHLER, ESQ., M.A.} \\ \text{C. W. PEAKE, ESQ., M.A.} \\ \text{D. N. MALLIK, ESQ., B.A., B.Sc.} \end{array} \right.$

Head Examiner—C. LITTLE, ESQ., M.A.

Examiners— $\left\{ \begin{array}{l} \text{BABU KALIPADA BASU, M.A.} \\ \text{,, ASUTOSH CHATTERJEE, M.A.} \\ \text{,, RAJMOHAN SEN, M.A.} \\ \text{,, SURYYAKUMAR KARFARMA, M.A.} \\ \text{REV. FATHER P. HIPPI, S.J.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Prove that if $ax^2 + bx + c = 0$ is satisfied by giving x the values a , 2
 β , γ , all different, it is an identity.

Verify that

$$(x-2)(x-3) - 8(x-3)(x-1) + 9(x-1)(x-2) = 2x^2$$

is an identity.

2. Solve (1) $\frac{a^2}{(x-a)^2} = \frac{b^2}{(x+b)^2}$; 2

$$\left. \begin{array}{l} (2) \ x(x+y+z) = a^2 \\ \quad y(x+y+z) = b^2 \\ \quad z(x+y+z) = c^2 \end{array} \right\} \quad 3$$

3. Show how to sum a geometric series (a, r) of n terms. 3

If the sum of n terms of such a series is 728, the common ratio being 3 and the first term 2, find n . 2

4. Show how to find the number of permutations of n things, r 5
 at a time.

Denoting this by P_r^n , prove that $P_r^{n+1} = P_r^n + rP_{r-1}^n$. 3

5. Write down the expansion of $(1 - \frac{1}{2}x) - \frac{1}{2}$, $x < 1$. 3

6. Expand a^x in powers of x . 5

7. State the conditions for the equality of triangles given in the 4
 first book of Euclid (a) when the triangles are equal in every respect,
 (b) when they are equal in area.

8. If ABC is a triangle having an obtuse angle at C , and PD is 4
 the perpendicular from B on AC , show that the square on AB is equal
 to the sum of the squares on AC and CB , and twice the rectangle AC ,
 CD .

ABC is a triangle whose side BC is bisected at D ; show that 4
 the sum of the squares on AB and AC is equal to twice the sum of the
 squares on AD and DB .

9. Show how to bisect an arc of a circle. 4

10. Inscribe a regular pentagon in a circle. 5

11. If the vertical angle of a triangle be bisected by a straight 4
 line which also cuts the base, the segments of the base shall have the
 same ratio which the other sides of the triangle have to one another.

ABC is a triangle right-angled at A ; AX , AY are equally 5
 inclined to AB , and meet BC or BC produced in X , Y . Show that

$$BX : BY = CX : CY.$$

CONIC SECTIONS AND TRIGONOMETRY.

Head Examiner—C. LITTLE, Esq., M.A.

| | | |
|------------|---|----------------------------------|
| Examiners— | { | BABU KSHETRAMOHAN BANERJEE, M.A. |
| | | „ BAIDYANATH BASU, M.A. |
| | | „ KALIPRASANNA GHATTORAJ, M.A. |
| | | „ KRISHNAPRASAD DE, M.A. |
| | | „ SYAMADAS MUKERJEE, M.A. |

The figures in the margin indicate full marks.

1. Define the circular measure of an angle, and show how to convert it into degrees. 3

An angle at the centre of a circle subtends an arc of 16 feet. If the radius of the circle is 7 feet, find the magnitude of the angle in degrees. 2

2. Define $\tan A$, and find an expression for all angles which have a given tangent. 1

Find the general value of θ given by the equation— 3

$$\frac{2 \tan \theta}{1 - \tan^2 \theta} = 1.$$

3. Prove that $\cos(A+B) = \cos A \cos B - \sin A \sin B$. 2

Express $\cos 4A$ in terms of $\cos A$, and show that $\cos^2 A + \cos^2 B + \cos^2 C = 1 + 2 \cos A \cos B \cos C$ if $A+B+C=0$. 2

4. Prove that, in any triangle, $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$. 3

Deduce the value of $\sin \frac{A}{2}$ and $\cos \frac{A}{2}$ in terms of the sides, and hence show that the area of a triangle is 2

$$\sqrt{s(s-a)(s-b)(s-c)},$$

$$\text{where } 2s = a+b+c.$$

5. Show how to solve a triangle when two sides and the included angle are given. 2

If $b=585$, $c=473$, $A=45^\circ 20' 30''$, find the angles B and C , given 4

$$\begin{cases} L \cot 22^\circ 40' 15'' = 10.3791240, \\ L \tan 14^\circ 13' = 9.4037182, \\ \text{diff for } 1' = 5304. \end{cases}$$

and also $\log 56 = 1.7481880$, $\log 529 = 2.7234557$.

6. Prove that the ordinate, with respect to any diameter of a parabola, of any point on the curve is a mean proportional to its parameter and the abscissa of the point with respect to the diameter. 6

7. Show that the portion of the tangent to a parabola at any point intercepted between that point and the directrix subtends a right angle at the focus. 5

Draw a tangent to a parabola from any point on the directrix. 2

8. Prove that the tangent to an ellipse at either end of a diameter is parallel to the system of chords bisected by the diameter. 3

Show that the line joining the points of contact of two parallel tangents is a diameter. 2.

9. The square of the ordinate of any point of an ellipse varies as the rectangle under the segments of the axis made by the ordinate. 6

10. Show that the difference between the focal distances of any point on a hyperbola is constant, and equal to the transverse axis. 3.

(Given the foci and the transverse axis, determine any number of points on the curve. 3

LATIN.

Paper-Setters—
 { REV. J. EDWARDS, M.A.
 W. W. HORNE, ESQ., B.A.
 HARINATH DE, ESQ., M.A. (Cal. and Cantab.), M.R.A.S.

POETRY.

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.),
 M.R.A.S.

The figures in the margin indicate full marks.

1. Translate into English, adding brief notes on the italicized words and phrases :— 15

- (a) Et terram Hesperiam uenies, ubi *Lydius* arua
 Inter opima uirum lani fluit agmine Thybris,
 Illic res laetae regnumque et *regia coniunx*
 Parta tibi, *lacrimas dilectae pelle Creusae*.
- (b) Sic o sic positum *adfati* discedite corpus.
 Ipse manu mortem inueniam : miserebitur hostis,
 Exuiasque petet ; facilis iactura sepulcri.
 Iam pridem inuisus diuis et *inutilis annos*
Demoror, ex quo me diuom pater atque hominum rex
Fulminis adflauit uentis et contigit igui.
- (c) At non ille, satum quo te mentiris, Achilles
 Talis in hoste fuit Priamo ; *sed iura fidemque*
Supplicis erubuit, corpusque exsanguis sepulcro
 Reddidit Hectoreum, meque in mea regna remisit.
- (d) Nec te tua plurima. Panthu,
 Labentem pietas, nec *Appollinis infula* texit.
 Iliaci cineres, et *flamma extrema* meorum,
 Testor, in occasu uestro nec tela nec ullas
 Uitauisso uices Danaum, et *si fata fuissent*,
 Ut caderem, meruisse manu.
- (e) Iuuenes fortissima fustra
 Pectora, si uobis ardentem extrema cupido
 Certa sequi, quae sit rebus fortuna uidetis ;
Excessere omnes adytis arisque relictis
 Di, quibus imperium hoc steterat ; succurritis urbi
 Incensae ; *moriatur, et in media arma ruamus*.
- (f) Instamus tamen immemores caecique furore,
 Et monstrum infelix sacrata sistimus arce.
 Tunc etiam fatis aperit Cassandra futuris
 Ora, *dei iussu non unquam credita* Teucris.

Nos delubra deum miseri, quibus ultimus esset
Ille dies, festa uelamus fronde per urbem.

2. Translate and write grammatical notes on the following :— 5
 - (a) Delitui, dum uela darent, si forte dedissent.
 - (b) Pulchrumque mori succurrit in armis.
 - (c) Occiderit ferro Priamus ? Troia arserit igni ?
 - (d) Et ni mea cura resistat, "
Iam flammae tulerint inimicus et hauserit ensis.
 - (e) Hoc erat, alma parens, quod me per tela, per ignes
Eripis, ut mediis hostem in penetralibus...cernam ?
3. (a) In a note on a passage of the second book of the *Aeneid*, Ser- 2
vius says : ' Saepe autem sub aliorum personis poeta causas exsequi-
tur nobilium.' Cite any references to any incidents connected with
Marius and Pompey to be found in the second book of the *Aeneid*.
 - (b) Scan the following lines :—
Quem non inculcavi amens hominumque deorumque ?
Aut quid in euersa uidi crudelius urbe ? 1
 - (c) Decline : ' Calchas,' ' Androgeos,' ' Panthus.' 1
 - (d) Explain :—' Euasisse uiam,' ' intonuit laeuom,' ' tactu 2
innoxia,' ' nimbo effulgens et Gorgone saeva,' ' sceleratas poenas.'
 - (e) Translate :— 2
Quis negat Aeneae magna de stripe Neronem ?
Sustulit hic matrem, sustulit ille patrem.
4. Translate :—
 - (a) Stant et iuniperi et castaneae hirsutae, 1½
Strata iacent passim sua quaeque sub arbore poma.
Omnia nunc rident ; at si formosus Alexis
Montibus his abeat, uideas et flumina sicca.

Scan the first two lines. 1

 - (b) Ille dolum ridens ' quo uincula neqtitis ? ' inquit. 1
' Soluite me, pueri ; satis est potuisse uideri.
Carmina quae uoltis cognoscite.'
 - (i) Construe ' Satis est potuisse uideri.' ½
 - (ii) From what sources did Virgil derive his theory of Creation ? ½
 - (c) Daphni, tuum Poenos etiam ingermuisse leones 1½
Interitum montesque feri siluaeque loquuntur.
Daphnis et Armenias curru subiungere tigres
Instituit, Daphnis thiasos inducere Bacchi.
 - (i) What is the date of this *Eclogue* ? ½
 - (ii) With whom has Daphnis been identified ? ½
 - (d) Ille deum uitam accipiet diuisque uidebit 1½
Permixtos herbas et ipse uidebitur illis,
Pacatumque reget patriis uirtutibus orbem.

With whom has the person alluded to in these lines been identi- 1½
fied, and what is the real meaning of these lines ?

 - (e) Dic quibus in terris inscripti nomina regum 1
Nascantur flores, et Phyllida solus habeto.
 - (i) What are the Latin, Greek, and English names of the flower 1
alluded to ?
 - (ii) What is the exact force of the plural ' regum ' ? 1
5. Translate and write grammatical notes on the following :— 3
 - (a) Hyblaeis apibus florem depasta salicti.
 - (b) Et longum formose uale uale, inquit, Iolla.
 - (c) Occidet et serpens et fallax herba ueneni.

6. (a) Write notes on—Conon, Tiphys, Nisa, Philomela. 1½
 (b) Write a short account of Gallus and his poems. 1½
 (c) Scan :— 1½
 Clarnassent ut litus 'Hyla Hyla' omne sonaret.
 Tityrus hinc aberat. Ipsae te, Tityre, pinus.
 Terrasque tractusque maris caelumque profundum.
 (d) Translate and explain :— 1½
 (i) Dic mihi, Damoeta, cuium pecus ? anne Latinum ?
 Non, uerum Aegonis ; nostri sic rure loquuntur.
 (ii) Hordea qui dixit, superest ut critica dicat.
 (e) How does Virgil use the following words in the *Eclogues* :— 2
 submittere, deponere, componere, deducere ?
 7. Translate into English prose :— 8
 Idas ille ego sum, Donace, cui saepe dedisti
 Oscula, nec medios dubitasti rumpere cantus
 Atque inter calamos errantia labra petisti.
 Heu, heu ! nulla meae te tangit cura salutis !
 Pallidior buxo, uiolaeque simillimus erro.
 Omnes ecce cibos, et nostri pocula Bacchi
 Horreo, nec placido memini concedere somno,
 Te sine (uae misero) mihi lilia nigra uidentur,
 Pallentesque rosae, nec dulce rubens hyacinthus ;
 Nullos nec myrtus, nec laurus spirat odores.
 At si tu uenias, et candida lilia fient,
 Purpureaeque rosae, et dulce rubens hyacinthus
 Tum mihi cum myrto laurus spirabit odores.
 Nam dum Pallas amet turgentes sanguine bacas,
 Dum Bacchus uites, deus et sata poma Priapus,
 Pascua lacta Pales, Idas te diliget unam.

LATIN PROSE.

Examiner—REV. J. EDWARDS, M.A.

The figures in the margin indicate full marks.

1. Translate :—

(a) At enim sunt qui dicant, Quirites, a me in exsilium eiectum esse Catilinam. Quod ego si verbo assequi possem, istos ipsos uicerem, qui haec loquuntur. Homo enim uidelicet timidus aut etiam permolestus vocem consulis ferre non potuit ; simul atque ire in exsilium iussus est, paruuit atque iuit. Hesterno die, cum domi meae paene interfectus essem, senatum in aedem Iouis Statoris vocavi, rem omnem ad patres conscriptos detuli ; quo cum Catilina venisset, quis eum senator appellavit ? quis salutavit ? quis denique ita aspexit ut perditum civem, ac non potius ut importunissimum hostem ? quin etiam principes eius ordinis partem illam subselliorum, ad quam ille accesserat, nudam atque inanem reliquerunt. Hic ego vehemens ille consul, qui verbo cives in exsilium eiicio, quaesivi a Catilina, in nocturno conventu apud M. Laecam fuisset necne. Cum ille, homo audacissimus, conscientia convictus primo reticuisset, patefeci cetera ; quid ea nocte gisset, quid in proximam constituisset, quem ad modum esset ei ratio totius belli descripta, edocui. Cum haesitaret,

cum teneretur, quaesivi, quid dubitaret proficisci eo, quo iam quidem pararet, cum arma, cum secures, cum fasces, cum tubas, cum signa militaria, cum aquilam illam argenteam, cui ille etiam sacrarium domi suae fecerat, scirem esse praemissam. In exsilium eiciebam, quem iam ingressum esse in bellum videbam? Etenim, credo, Manlius iste centurio, qui in agro Faesulano castra posuit, bellum populo Romano suo nomine indixit, et illa castra nunq non Catilinam ducem expectant, et ille eiectus in exsilium se Massiliam, ut aiunt, non in haec castra conferet.

(b) Parse all the verbs used in the above passage in the *subjunctive mood*, explaining the syntax.

2. Give a short account of Cicero's *Third Oration against Catiline*, the circumstances that led to it, the subject and character of the speech, and the issue of it.

3. Translate :—

(a) (*unseen*) Cum vos considero, milites, et cum facta vostra aestumo, magna me spes victoriae tenet. Animus aetas virtus vestra me hortantur, praeterea necessitudo, quae etiam timidos fortes facit. Nam multitudo hostium ne circumvenire queat, prohibent angustiae loci. Quod si virtuti vestrae fortuna inviderit, cavete inulti animam amittatis, neu capti potius sicuti pecora trucidemini, quam virorum more pugnantes cruentam atque luctuosam victoriam hostibus relinquatis.

(b) (*unseen*) An vero tam parvi animi videamur esse omnes, qui in re publica atque in his vitae periculis laboribusque versamur, ut, cum usque ad extremum spatium nullum tranquillum atque otiosum spiritum duxerimus, robiscum simul moritura omnia arbitremur? An statuas et imagines, non animorum simulacra, sed corporum, studiosae multi summi homines reliquerunt: consiliorum relinquere ac virtutum nostrarum effigiem nonnulli multo malle debemus, summis ingeniis expressam et politam?

4. Give a condensed outline of the argument of Cicero's Essay *De Senectute*.

5. Translate into Latin :—

(a) How many are there of you?

(b) May you all of you prove successful.

(c) Some have more faith in good luck than in honest work.

(d) He that hopes to succeed in life, and makes no effort to deserve success, is cherishing a fond dream, and is doomed to disappointment.

(e) Few of us can boast that we have never failed in any undertaking.

(f) There can be little doubt but that the boys would have behaved better, had they been more carefully looked after.

6. Translate :—

(a) Nec nunc quidem vires desidero adolescentis, is enim erat locus alter de vitis senectutis, non plus quam adolescens tauri aut elephantis desiderabam. Quod est eo decet uti, et quidquid agas agere pro viribus. Quae enim vox potest esse contemptior quam Milonis Crotoniatæ? qui, cum iam senex esset athletasque se exercentes in curriculo videret, adspexisse lacertos suos dicitur illacrimansque dixisse: 'at hi quidem mortui iam sunt.' Non vero tam isti quam tu ipse, nugator; neque enim ex te unquam es nobilitatus sed ex lateribus et lacertis tuis. Nihil Sex. Aelius tale, nihil multis annis ante Ti. Coruncanianus, nihil modo P. Crassus, a quibus iura civibus praescribebantur, quorum usque ad extremum spiritum est provecta prudentia. Orator metuo ne languescat senectute, est enim munus eius non ingenii solum sed laterum etiam et virium. Omnino canorum illud in voce splendet etiam nescio quo pacto in senectute, quod

equidem adhuc non amisi; et videtis annos. Sed tamen decorus est seni sermo quietus et remissus, facitque persæpe ipsa sibi audientiam disertis senis compta et mitis oratio.

(b) Apud Xenophontem autem moriens Cyrus maior hæc dicit: Nolite arbitrari, o mihi carissimi filii, me quum a vobis discessero nusquam aut nullum fore. Nec enim dum eram vobiscum animum meum videbatis, sed eum esse in hoc corpore ex eis rebus quas gerebam intellegebatis. Eundem igitur esse creditote, etiam si nullum videbitis. Nec vero clarorum virorum post mortem honores permanent, si nihil eorum ipsorum animi efficerent quo diutius memoriam sui teneremus. Mihi quidem numquam persuaderi potuit animos dum in corporibus essent mortalibus vivere, cum exissent ex eis emori; nec vero tum animum esse insipientem cum ex insipienti corpore evasisset; sed cum omni admixtione corporis liberatus purus et integer esse coepisset, tum esse sapientem. Atque etiam cum hominis natura morte dissolvitur, ceterarum rerum perspicuum est quo quæque discedat; abeunt enim illuc omnia unde orta sunt; animus autem solus nec cum adest nec cum discedit apparet. Iam vero videtis nihil esse morti tam simile quam somnum.

7. Translate into Latin:—

Lucius Junius Brutus, the famous patriot, who, according to the common story detailed by all ancient writers, drove the Tarquins from Rome, was the first Consul, B.C. 509. Livy calls him the son of Tarquinia, sister of Superbus. His elder brother having been killed by that king, he feigned idiocy to escape the same fate. After the outrage on Lucretia he threw off his disguise, and took the lead in the expulsion of the kings. He fell in battle against the people of Veii and Tarquinii, who had invaded the Roman territory in order to reinstate the Tarquins. The story is full of difficulties, as are all old stories before the age of written records. But it seems to be acknowledged that there was such a person as Brutus, and that he was commander of the horse. M. Brutus, who helped to assassinate Caesar, claimed to be his descendant.

FRENCH.

Paper-Setters—{ J. MACFARLANE, ESQ.
REV. FATHER E. FRANCOTTE, S.J.

POETRY.

Examiner—GASTON LE FAUCHEUR, ESQ. .

The figures in the margin indicate full marks.

Translate:—

- (a) Ainsi, quand désertant sa bauge solitaire,
Le sanglier, frappé de mort,
Est là, tout palpitant, étendu sur la terre,
Et sous le soleil qui le mord;
Lorsque, blanchi de bave et la langue tirée,
Ne bougeant plus en ses liens,
Il meurt, et que la trompe a sonné la curée
A toute la meute des chiens,
Toute la meute alors, comme une vague immense,
Bondit; . . .

- (b) Je ne puis ! Malgré moi *l'infini* me tourmente. 2
 Je n'y *saurais* songer sans crainte et sans espoir ;
 Et, *quoi* qu'on en ait dit, ma raison s'épouvante
 De ne pas le comprendre, et pourtant de le voir.
- (c) Une minute ençor, madame, et cette année, 3
 Commencée avec vous, avec vous terminée,
 Ne sera plus qu'un souvenir.
 Minuit : voilà son glas *que* la pendule sonne,
 Elle s'en est allée en un lieu d'où personne
 Ne peut la faire revenir.
- (d) Peut-être on vous dira d'y boire avec largesse, 4
 D'y verser hardiment le vin des passions ;
 D'autres vous prêcheront *l'égoïste* sagosse
 Qui rampe et *se réserve* à ses ambitions.
 Mais aux vils tentateurs vous serez indociles !
 La Muse *vous* conseille, et *vous* saurez choisir ;
 Restez dans le sentier des vertus difficiles ;
 Votre âge a des devoirs plus doux que le plaisir.
- (e) Il est amer et doux, pendant les nuits d'hiver, 2
 D'écouter près du feu qui palpite et qui fume,
 Les *souvenirs* lointains lentement s'élever
 Au bruit des carillons qui chantent dans la brume.
- (f) La vie est ainsi faite. *Elle* ondule à nos yeux 4
 Comme une plantureuse et profonde prairie,
 Dont un magicien tendre et mystérieux
 Varie à tout moment l'éclatante féerie.
 Nous y courons, *ravis*, cueillant tout sans choisir,
 Touchant jusqu'aux boutons qui s'entr'ouvrent à peine,
 Mais l'éblouissement nous ôte le loisir
 De savourer les fleurs dont notre main est pleine.

2. In the foregoing extracts :—

- (a) Parse *fully* the fourteen italicized words. 7
- (b) Give the principal parts of the following verbs—*viz.*, the 8
temps primitifs, and, in these, *only* the first person singular in the case
 of finite tenses—meurt (a) ; puis, saurais, voir (b) ; dira, boire (d) ;
 faite (f).
- (c) Conjugate, in the negative form of the passive voice, the 2
 past conditional of *mord* (a) ; and the present subjunctive of *s'en aller*
 (c).
- (d) Give the feminine of—sanglier (a) ; synonyms for—bave, 2
 trompe, bondit (a). Compare the meaning of *meute* and *émeute*.
3. Re-write extract (c) in your own words :—*viz.*, the four first 4
 lines, in simple prose language ; and the remainder in your own name,
 in the first person singular of the simple *Futur*.
4. (a) Scan clearly the second lines of passages (a) and (d), separat- 2
 ing each foot by a single vertical line, and marking similarly the
césura by a double line.
- (b) Which of the above passages are exclusively in Alexandrine 3
 verse ? Point out the rhyme peculiarities of extract (c) ; also, a
 remarkable figure of speech in the latter part of the same ; again, a
 poetical license.
5. Write short biographical notes on Victor Hugo and Victor Ge 3
 Laprade.
6. Write a short essay, *either* on French poetry, *or* on the San 8
 Francisco disaster of 1906.

7. Translate :—

3

Avant que de ses deux moitiés
 Ce vers que je commence ait atteint la dernière,
 Peut-être en ces murs effrayés
 Le messager de mort, noir recruteur des ombres,
 Escorté d'infâmes soldats,
 Remplira de mon nom ces longs corridors sombres.

FRENCH PROSE.

Examiner—GASTON LE FAUCHEUR, ESQ.

The figures in the margin indicate full marks.

1. Translate :—

(a) Ce comité n'était point composé d'hommes d'un talent supérieur ; la machine de terreur, dont les ressorts avaient été montés par les événements, exerçait seule la toute-puissance. Le gouvernement ressemblait à l'effrayant instrument qui donnait la mort : on y voyait la hache plutôt que la main qui la faisait mouvoir. Il suffisait d'une question pour renverser le pouvoir de ces hommes ; c'était : combien sont-ils ?

4

(b) Je revins à Paris : tous les jours, on tremblait pour quelques nouvelles victimes enveloppées dans la persécution générale qu'on faisait subir aux émigrés et aux prêtres. Le marquis d'Ambert, qui avait été le colonel du général Bernadotte avant la révolution, fut pris, et traduit devant une commission militaire : terrible tribunal, dont l'existence, hors de l'armée, suffit pour constater qu'il y a tyrannie. Le général Bernadotte alla trouver le Directoire, et lui demanda, pour seul prix de tous ses services, la grâce de son colonel ; les directeurs furent inflexibles : ils appelaient justice une égale répartition de malheur.

5

(c) Lorsque César renversa la république Romaine, il avait à combattre Pompée et les plus illustres patriciens de son temps ; Cicéron et Caton luttèrent contre lui ; tout était grandeur en opposition à la sienne. Le général Bonaparte ne rencontra que des adversaires dont les noms ne valent pas la peine d'être cités. Si le Directoire même avait été dans toute sa force passée, il aurait dit comme Rewbell, lorsqu'on lui faisait craindre que le général Bonaparte n'offrit sa démission : 'Eh bien ! acceptons-la ; car la république ne manquera jamais d'un général pour commander ses armées.'

5

(d) La liberté triompherait aujourd'hui dans l'opinion universelle, si tous ceux qui se sont ralliés à ce noble espoir avaient bien vu, dès le commencement du règne de Bonaparte, que le premier des contre-révolutionnaires, et le plus redoutable alors, c'était celui qui se revêtait des couleurs nationales, pour rétablir impunément tout ce qui avait disparu devant elle.

4

2. (a) Comment briefly on the literary talent of Mme de Staël.

4

(b) What slight blemishes have critics found in her style ? Account for them.

2

3. Translate into French :—

(a) The Dutch Revolution, in which the Stadholdership was abolished and the Batavian Republic established, took place in February, seventeen hundred and ninety-five. The old constitution of Switzerland was overthrown and the Helvetian Republic set up, under

4

French influence, in April, 1798. The republican constitution was modified in eighteen hundred and three.

(b) Towards the end of last century, the province of Artois comprised the territory formerly occupied by the *Atrebrates*, and part of that inhabited by the *Morini*.

(c) It is said that Cromwell intended to leave for America before the Long Parliament assembled, but was stopped by the government. This is probably untrue. There is more ground for believing that he said, after the passing of the Grand Remonstrance, that if it had not passed he would have left England for ever.

4. Translate into idiomatic English :—

(a) Une des figures les plus considérables de la révolution fut l'abbé Sieyès ; il en est peut-être aussi la plus singulière.

(b) La fête du prophète ne fut pas célébrée avec moins de pompe ; Bonaparte se rendit à la grande mosquée, s'assit sur des coussins, les jambes croisées comme les Cheïkhs, dit avec eux les litanies du prophète, en balançant le haut de son corps et agitant sa tête. Il édifia tout le saint collège par sa piété.

5. (a) Write short biographical notes on the following :—La Roche-Jaquelin, Daunou, Suchet, Charles-François Lebrun.

(b) Say a few words about the tenets, of Machiavel, l'Institut de France, les Girondins.

6. (a) Give the grammar and syntax of the six italicized words in Question 1 ; and the principal parts of the *irregular* verbs in the same.

(b) Distinguish between the meanings of *même* in 'Même si le Directoire . . .' and 'Si le Directoire même . . .' (1, c).

7. Write a short essay, in French, on Napoleon Bonaparte.

SANSKRIT.

| | | |
|----------------|---|-------------------------------------|
| Paper-Setters— | { | MAHAMAHOPADHAY HARAPRASAD SASTRI, |
| | | M.A. |
| | | BABU NRISINHACHANDRA MUKERJI, M.A., |
| | | B.L., F.R.G.S. |
| | | PANDIT SEBANATH SASTRI, M.A. |

FIRST PAPER.

Head Examiner—BABU NRISINHACHANDRA MUKERJI, M.A., B.L., F.R.G.S.

| | | |
|------------|---|--|
| Examiners— | { | BABU MURALIDHAR BANERJEE, M.A. |
| | | „, RAMKUMAR CHAKRABARTI. |
| | | „, SARATCHANDRA CHAKRABARTI, M.A. |
| | | „, SARATCHANDRA GUPTA, M.A. |
| | | PANDEYA RAMAVATARA SARMA, SAHITYA-CHARYA, M.A. |

The figures in the margin indicate full marks.

1. Give the substance of the following *slokas* in English, referring to the context in each case :—

(a) सत्रियान्तकरोऽपि विक्रमस्तेन मामवति नाजिने स्वयि ।

पावकस्य महिमा न गच्छते कस्यचनसति वागरेऽपि यः ॥

- ✓ (b) समुद्रपत्न्योर्जलसंनिपाते प्रतात्मनामत्र किलाभिधेकात् ।
तस्मादबोधेन विनापि भूयस्तनुयक्षां नास्ति शरीरबन्धः ॥

2. Explain the allusions in the following *shlokas* in your own words in Sanskrit :—

- (a) वामनाश्रमपदं ततः परं पाद्वनं श्रुतशृङ्गेरुपेयिवान् ।
उन्मनाः प्रथमजन्यवैष्टितान्यस्मिन्नपि बभूव राघवः ॥
- (b) स्थाण्डिलश्च धनुषस्तपोवनं प्राप्य दाशराथरात्तकामुः ॥
विग्रहेण मदनस्य चारुणा सोऽभवत् प्रतिनिधिर्न कर्मणा ॥
- (c) विभ्रतोऽस्त्रमवलोप्यकुण्डितं ह्यो रिपू मम मतो समागमो ।
येनृतसहरणान्च हेहवस्त्वं च कीर्तिमपहर्तुमुद्यतः ॥

(1) Derive उपेयिवान् in (a), and विभ्रत् in (c), and give the third person singular of the roots in लिट्. 4

3. Translate the following *shlokas* into English, referring to the context in each case :— 12

- (a) न महर्तुमलमस्मि निर्दयं विप्र इत्यभिभवत्यपि त्वयि ।
शंस किं गतिमनेन पत्रिणा हन्ति लोकमुत ते मखार्जितम् ॥
- (b) तद्गतिं मतिमतां वरेप्सितां पुण्यतीर्थगमनाय रक्ष मे ।
पीडयिष्यति न मां खिलीकृता स्वर्गपद्मतिरभोगलोलुपम् ॥
- (c) स्वाधिधारापरिहृतः कामं चक्रस्य तेन मे ।
स्थापितो दशमो मूर्धा लभ्यांश्च हव रक्षसा ॥
- (d) अदः शरण्यं शरभकुनामस्तपोवनं पावनमाहिताग्नेः ।
चिराय सन्तप्य समिद्धिरग्निं यो मन्तूपूतां तनुमप्यहोषीत् ॥

(1) In extract (d) derive शरण्यम् and स्वाहिताग्निः. What is the alternative form of the second word? Change the voice of the second half. Derive अहोषीत्, and give the third person singular of the root in लिट्. 7

4. Explain the following in your own words in Sanskrit :— 12

[No credit will be given for mere quoting of Mallinatha's language.]

- (a) अभ्यासनिवृत्तेन मनसा हृदयाश्रयम् ।
ओतिर्मयं विचिन्वन्ति योगिनस्त्वां विमुक्तये ॥
- (b) राक्षसत्वमवधूय मातृकं पित्रमस्मि गमितः शमं यदा ।
नन्वनिश्चितफलो मम त्वया निग्रहोऽप्ययमनुग्रहोऽस्ति ॥

(c) अकाले बोधितो धात्रा प्रियस्वप्नो वृथा भवान् ।
रामेषुभिरितीहासो दीर्घनिद्रां प्रवेक्षितः ॥

(d) पित्रा विक्षुब्धं मदपेक्षया यः श्रियं युवायुङ्गतामभोक्ता ।
इयन्ति वर्ष्वाणि तया सहोन्नमभ्यस्यतीव व्रतमाविधारम् ॥

5. Translate the following into Sanskrit :—

8

If we go out of doors on a clear night and look up at the sky, we see it studded with bright points. These are the stars. Some are much brighter than others. The brightest ones are those nearest to us. Some are so far away that we can only see them on very clear nights. But there is one body we can see, that seems very much larger than others. You all know what that is. We call it the moon. Though it looks larger than the stars, it is really smaller. It is the smallest of all the heavenly bodies that we can see.

6. Account for the absence of *sandhi* in the last line of the following :—

2

नित्यतुः स्थलनिवेशिताटनी
लीलयैव धनुषी अधिष्यताम् ॥

7. Construct three sentences to illustrate the use of *ल्य* in the *ātmanepadiya* form.

3

SANSKRIT.

SECOND PAPER.

Head Examiner—BABU NRISINHACHANDRA MUKERJI, M.A., B.L.,
F.R.C.S.

Examiners—
 { BABU SATKARI ADHIKARI, M.A.
 .. BIHARILAL BANERJEE, M.A.
 .. SURENDRANATH BHATTACHARYYA, M.A.
 .. BRAJALAL SASTRI, M.A.
 .. BHAGABATKUMAR GOSWAMI, SASTRI M.A.

The figures in the margin indicate full marks.

Q1. Give the substance of the following in Sanskrit of your own composition :—

6

(a) किमात्मनिर्वादिष्यामुपेक्षे ज्ञायामदोषामुत संयजानि ।
इत्येकपक्षाग्रयविह्वलत्वादासीत् दोषाचलचित्तवृत्तिः ॥

(b) पोरेषु सोऽहं बहुलौभवन्तम् अपां तरङ्गेष्विव तैलविक्षुप्तम् ।
सोऽहं न तत्पूर्वमवर्णमौश आलानिकं ख्यातुमिव द्विषेन्मूः ॥

2. Explain in English :—

8

- (a) अपवाद इवोत्सर्गं व्यावर्तयितुमौश्वरः ॥
 (b) स्वर्गाभिष्यन्दवसनं कृत्वेवोपनिवेशिता ॥
 (c) विडोक्षवा विष्णुरिवाग्रजेन चात्रा यदित्यं परवानसि त्वम् ॥
 (d) धर्मार्थकामेषु समां प्रपेदे यथा तथेवावरजेषु दृष्टिम् ॥

3. Mention the names of the sons of Bharata and Satrugna with those of the cities respectively ruled by them. Mention also the modern names of those of the cities that still exist.

4

4. Why did the two sons of Rama receive the names Kuśa and Lava? Quote the *śloka*, giving the reason for it.

4

5. Substantiate, by mythological allusions, the assertion contained in the following line :—

1

धर्मसंरक्षणायैव प्रवृत्तिर्भुवि शार्ङ्गिणः

6. To what does the simile contained in the following lines refer ?—

1

आदिष्टवर्मा मुनिभिः स गच्छंस्तपतां वरः ।

विरराज रथप्रभेर्वालखिलेरिवांशुमान् ॥

7. Expound the *samāsas* in the following, showing the gender of each word :—

6

अथाशुलोके हुतधूमनेतुशिखान्नखिग्धसमुद्रुशाखम् ।

तपोवनं प्राधयमाभिभूतसमुच्चरद्धारुपतत्त्रिशुम् ॥

8. How do you account for the *vibhakti* in the underlined words ?

3

(a) तृणाय मत्वा रघुनन्दनोऽयं बाणेन रक्षः प्रधनान्निराख्यत् ॥

(b) प्रौतः प्रतस्थे सुनिराग्रमाय ।

(c) तपोवनेषु स्पृहयालुरेव ।

9. Change the voice of (a) in Question 8.

2

10. Write in simple Sanskrit, not exceeding eight lines, the story of the defeat of Lavana by Satrugna.

4

11. Correct the grammatical mistakes in the following :—

5

(a) रानेय रावणं जग्निरे ।

(b) आत्रा अहं दृश्यते ।

(c) मया प्राप्तो गाः नोयते ।

(d) अहं प्राप्ते अधितिष्ठामि ।

(e) अहं प्राप्तक जातमवा ।

12. Translate into English :—

- (a) तरङ्गसङ्गादपहैः पलाशैर्जालाश्रयं सातिशयां दधन्ति ।
 सधूमदीप्ताग्निरुचीनि रेवतुलाम्रोत्पलान्याकुलघटपद्मानि ॥
- (b) বিলাসিনী নৈঃ সসৃষ্টিং নিজাং বিলোক্যাপহৃতাং পযোমিঃ ।
 কুলানি সামর্ঘ্যতয়েব তেজুঃ সরোজলক্ষ্মীঃ স্যলপদ্মহাষিঃ ॥
- (c) निशातुषारैर्नयनाम्बुकक्षैः पन्नान्तपर्यागलदच्छबिन्दुः ।
 उपारुरोवेव नदत्यतङ्गः कुमुद्वतीं तीरतरुर्दिनाशे ॥

13. Translate into Sanskrit :—

There was a certain Brahmin in a certain village named Hari Sarman. He was poor and foolish ; and in evil case for want of employment. And he had very many children, that he might reap the fruits of his misdeeds in a former life. He wandered about begging with his family, and at last he reached a certain city and entered the service of a rich householder named Sthūla Datta.

BENGALI.

(FOR FEMALE CANDIDATES.)

Paper-Setters—{ BABU CHANDRANATH BASU, M.A.
 PANDIT SIBANATH SASTRI, M.A.

BENGALI POETRY.

Examiner—PANDIT SIBANATH SASTRI, M.A.

The figures in the margin indicate full marks.

Answers to be always in Bengali.

1. Explain :—

- (a) সুনীল যমুনা-জলে মিলি কুতূহলে
 বহিছেন ওই শ্বেত সুর-তরঙ্গিনী—
 মুক্তাহারে গাঁথা যেন ইজ্ঞানীলমণি,
 শ্বেত পদ্মমালা কিবা নীল উত্তপলে ।
- (b) রাবণের অহুন্নর পদের প্রহারে
 তৈলি, পতিব্রতা-ধর্ম পালিলা বৈধিলি,
 জ্যেষ্ঠ-ভক্তি বশে অট্টা ভরতের শিরে—
 সে পদ, সে শির ত পরম্পর মিলি ।

(c) লাগরের ভালে, সখি, এ কনকপুরী
রঞ্জনের রেখা ! কিন্তু কারাগার যদি.
সুবর্ণ-গঠিত, তবু বন্দীর নয়নে
কমনীর কছু কি লো শোভে তার আভা ?
সুবর্ণ পিঞ্জর বলি হয় কি লো সুখী
সে পিঞ্জরে বদ্ধ পাখী ? ..

2. Who is শাতকৰ্ণি ? For what is he known in mythology ? 3

3. What figure of speech do you find in the following lines ? To what object does the poet refer in them ? 3

মানসের হংসরাজি ধবল-বরণা
নীলহংসদলে খেন হয়েছে মিলিত.
ভূতলে চিত্রিত শ্বেত চন্দনরচনা
শোভে যেন কৃষ্ণপত্রে অঙ্কুর-অঙ্কিত ।

4. Give the meanings of— 4

উপকর্ষ, আহিতাগ্নি, নীহার, মঞ্জুল, উর্ষি, প্রভঞ্জন, শর্বরী
and প্রবাহিনী.

5. Mention the events alluded to by Sita in the following lines :— 3

স্বর্ণ-রথ-চক্র, মর্ষরি নির্বোধে,
পূরিল কানন-রাজি, হায়, ডুবাইয়া
অভাগীর আর্জুনাদ !

6. Describe, in your own language, what Sita saw in her state of trance when being carried away by Ravana. 6

7. Describe the special features whereby the poetry of the author of *Meghnadh* is distinguished from preceding Bengali poetry. 8

8. Who was সন্নমি ? Why was she so friendly to Sita ? 4

9. Translate into Bengali :— 8

O liberty ! the prisoner's pleasing dream,
The poet's nurse, his passion and his theme,
Genius is thine, and thou art fancy's nurse,
Lost without thee the ennobling powers of verse
Heroic song from thy free touch acquires
Its clearest tone, the rapture it inspires
Place me where winter breathes his keenest air,
And I will sing if liberty be there,
And I will sing at liberty's dear feet,
• In Afric's torrid clime, or India's fiercest heat.

10. Describe Akshay Kumar Datta's services to the Bengali language and literature. 12

BENGALI PROSE.

(FOR FEMALE CANDIDATES.)

Examiner—PANDIT SIBANATH SASTRI, M.A.*The figures in the margin indicate full marks.**Answers to be always in Bengali.*

1. Describe some of the marvellous transformations undergone in the presence of the sceptre of light in the hand of the god of justice as related in your author's dream. 5
2. What changes have been introduced by modern science in men's conception of the universe? Give facts in illustration of your answer. 7
3. State all that your book says about the Milky Way. 5
4. The average rainfall in Egypt is very small. How then is the average vegetable produce of the country maintained year after year? 3
5. What peculiarity was noticed in connexion with one of the two shooting stars observed in 1798? 3
6. There is a kind of fish, the upper half of whose eye is like that of a land-animal, whereas the lower half is like that of an aquatic creature. What strange adaptation does it prove to its habits of life? 4
7. It is stated in your book that in the year 1910 there was raining of blood in Hungary; to what cause was it ultimately traced? Mention some more instances of the same kind. 6
8. What are the branches of learning alluded to in the following rebuke administered by the goddess of learning to the people of India? Is the rebuke just? 6

আর তোমার স্বদেশীয় লোকদিগকে শিক্ষার করিতে হয়, কারণ যতগুলি বুক রক্ষণাবেক্ষণের ভার কেবল তাঁহাদিগের উপর সমর্পিত আছে, প্রায় তাহার সমুদয়ই ভগ্ন ও শুষ্ক হইয়া যাইতেছে।

9. Write an essay on House Sanitation. 12

10. Translate into Bengali :— 9

Late that night, when the city was in slumber, Siddhartha stepped gently to the door of his wife's apartment. He saw Yasodhara sleeping with her babe on her breast. How lovely the infant appeared! Siddhartha would fain have held his child in his arms, and kissed him, but fearing to break his wife's sleep, he took a silent farewell. Prostrating himself at the feet of his father, he departed, resigning his possessions and all who were dear to him.

ARABIC.

Paper-Setters—{ HARINATH DE, ESQ., M.A. (*Cal. and Cantab.*),
M.R.A.S.
R. F. AZOO, ESQ.

POETRY.

Examiner—MAULAVI KAMAL-UD-DIN AHMAD, M.A.

The figures in the margin indicate full marks.

1. Translate into English :—

A.

داو بالرفق جراحات الخرق
وابل قبل الذم والحمد وذق
وسع الناس بخلق حسن
لم يضق شي على حسن الخلق
كل من لم تتسع أخلاقه
بعد احسان اليه ينسحق
كم قرانا يا اخي نبقى على
جولان الموت فى هذا الافق
نحن ارسال الى دار البلى
نتوالى عبقما بعد عذق

B.

اي عيش يكون ابلى من عيش
ش كفاف قوت بقدر البلاغ
ماحب البغي ليس يسلم منه
وعلى نفسه بغى كل باغ
رب ذي نعمة تعرض منها
حائل بينه وبين المساغ
ابلى الدهر في مواعظه بل
زاد فيهن لي على البلاغ

غَبْنْتُني الايامَ عَقْلِي ومَالِي
رَشْبَابِي ومَحْتِي وفِرَاقِي

2. (a) Write out all the hollow and defective verbs **اجوف** and **3 ناقص** in extract A, giving their roots and primary meanings.

(b) Parse **غَبْنْتُني الايامَ عَقْلِي ومَالِي**. Cite the cases when the **3** object of a verb must precede its subject, illustrating your answer by examples.

(c) What part of speech is **رَبِّ**? Give examples of the different uses of this word. **2**

3. Translate into English :— **8**

اشرب فوادك بغضة اللذات
واذكر حلول منازل الاموات
لا تلهينك عن معادك لذة
تغنى وتورث دائم الحسرات
ان السعيد غدا زهيد قانع
عبد الله باحسن الاخبات
اقم الصلوة لوقتها بطهرها
ومن الضلال تفاوت الميقات
واذا اتسعت برزق ربك فاجعل
منه الاجل لوجه الصدقات
في الاقربين وفي الاباعد تارة
ان الزكاة قرينة الصلوات
وارع الجواز لعله متبرعا
بقضاء ما طلبوا من الحاجات
واخفض جناحك ان رزقت تسلطا
وارغب بنفسك عن ردى اللذات

4. (a) Parse line 3 in the above extract, using the technical terms **2** of Arab grammarians.

(b) What is the **نون** in **لا تلهينك** and **فاجعلن** called by the grammarians? Conjugate the first of these verbs with this **نون** throughout. 3

(c) Explain fully the meaning of **اخفض جناحك** 1

5. Translate into English:— 8

المنايا تجوس كل البلاد
والمنايا تبيد كل العباد
لتذالن من قرون اراها
مثل ما نلس من ثمود وعاد
هن افنين من مضى من نزار
هن افنين من مضى من اباد
هل تذكرت من خلا من بني الاصف
ر اهل القباب و الانطواد
هل تذكرت من خلا من بني سا
سان ارباب فارس والسواد
اين داود اين اين سليمبا
ن المنيع الاعراض والاجناد
راكب الريح قاهر الجن والان
س بسطانه مذل الاعادي
اين نمود وابنه اين قارو
ن وهامان اين ذو الاوتاد
ان في ذكرهم لنا لاعتبارا
ودليلا على سبيل الرشاد
وردوا كلهم حياض المنايا
ثم لم يصدروا من الايراد

6. (a) Scan any one of the above lines, naming the metre. 2

(b) Write short biographical notes on the persons mentioned in the above extract. 3

(c) Give the singulars of all the plurals occurring in this extract. 3

7. Translate into Arabic :—

14

We had reached the limits of the Salt Desert, and were about crossing the high road that leads from Tehran to Meshed, about twenty parasangs to the east of Damghan, when Aslan Sultan made a halt, and proposed that we should remain concealed for a day in the broken ground that borders the road, in the hopes that fortune might throw us in the way of a passing caravan, which it was his intentions that we should pillage. At the very dawn of the following day, a spy, who had been stationed on an adjacent hill, came in great haste to report that he saw clouds of dust rising in the direction of Damghan, and approaching towards us, on the road leading to Meshed.

ARABIC PROSE.

Examiner—R. F. Azoo, Esq.

The figures in the margin indicate full marks.

1. Translate into English :—

12

قال الراوي وكان عند حذيفة في تلك الساعة رجل من مشايخ العشيرة قد اقصى بالفضل وحسن السيرة يقال له خميسة بن عمرو فنهاه عن ذلك الامر وقال له زاد الله توفيقك وارشد طريقك ان قيس لم يسبقك الى المراتب العالية والمناصب السامية وانما فرس سبق آخر فما في هذا من ضرر فاني لا ارضى لك بهذه الفعال لانها نقص في العقل والكمال وما يوصف الانسان الا بالجد والاحسان والعفو عند المقدرة والامكان والراي ان تقتصر عن هذا اللجاج الذي يورث الهلاك والهجاج لان مثل قيس يجب ان ينصف ولا يظلم وان سالمته فرهان بنى عيس كان لجاهلك اسلم فلما سمع حذيفة من خميسة ذلك المقال خرج عن دائرة الاعتدال وشدته في حضور الرجال فوثب الشيخ على قدميه وخرج من

امامه وقد صعب عليه وهو ينشد ويقول من فواد متبول
البغي شوم يا ابا حجار فتكاته كطوارق الاسعار

فاحذر مضاربه اذا جردته وانصف ولا تلبس ثياب العار
واسال خبيرا عن ثمود واهله لما طغوا وبغوا على الجبار
يخبرك كيف اتاهم في ليلة امر من الله العزيز الباري
فابادهم تحت الظلام فاصبحوا بين الطلول شواخص الابصار

2. (a) Give a short account of the wars of داوس والغبراء. 2

(b) Give the singulars* of the plurals, and *vice versa*, of the following substantives:—طريق - سيرة - عشيرة - مشايخ - الراوي - طلول - طوارق - فؤاد - دائرة - فرسان - فعال - فرس. 4

(c) Give the roots and primary meanings of the following:— 4

طوارق - متبول - اعتدال - هجاج - يورث - تقنصر - ارضى - ا

(d) Account for the جزم in يخبرك in the last line but one of the above verses. 2

3. Translate into English:— 7

وصاح الاسكندر يا ملك الهند ابرز الينا وابق على عدتك
وعيالك ولا تحملهم الى الغناء فانه ليس من المروءة ان يرمي
الملك بعدته في المهالك المتلفة والمواقع المجحفة بل
يقيمهم بماله ويدفع عنهم بنفسه فابرز اليي ودع الجند فاينا قهر
صاحبه فهو الاسعد . فلما سمع فور من ذي القرنين ذلك الكلام
دعته نفسه لملاقاته طمعا فيه وظن ذلك فرصة فبرز اليه الاسكندر
فتجادلا على ظهري فرسيهما ساعات من النهار ليس يلقي
احدهما من صاحبه فرصة ولا حيلة ولم يزالا يتعاركان . فلما اعيا
الاسكندر امره ولم يجد له فرصة اوقع ذو القرنين بعسكرة صيحة
عظيمة ارتججت لها الارض والعساكر فالتفت فور عند ما سمع
الزعقة وظنهما مكيدة فحمله عساكرة فعاجله ذو القرنين بضربة امالته
عن سرجه فوقع الى الارض فلما رأت الهند ما نزل بهم وما صار
اليه ملكهم حملوا على الاسكندر فقاتلوه قتالا احبوا معه الموت
فوفدهم من نفسه الاحسان ومنحه الله اكنافهم فاستولى على

بلادهم وملك عليهم رجلا من ثقافته واقام بالهند حتى امتوثق
له ما اراد من امرهم واتفاق كلمتهم - ثم انصرف عن الهند
وخلف ذلك الرجل عليهم ومضى متوجها نحو ما قصد *

4. (a) Explain fully :—

3

اتفاق كلمتهم - منحه الله اكدافهم - ابق على

(b) Name the *افعال القلوب*, and illustrate, with examples, their governing power. 3

5. Translate into English :—

8

زارت بلا موعد في ظلمة الغسق
كانها البدر في داجٍ من الافق
هيفاء ما في البرايا من يشابهها
في رونق الحسن او في بهجة الخلق
ناديت لمارات عيني محاسنها
ان من خلق الانسان من غلق
اعينها نظرات الناس قاطبة
ل اعوذ برب الفلاس والفلق

6. Translate into Arabic :—

15

The few cottages and houses which I passed were deserted, and many of them bore signs of having been plundered. Not a peasant was to be seen. The evil fame of the soldiers had chased away all those who had not actually taken arms. At last, after riding for three hours, I recollected that I was far enough from the pursuers to be free from danger ; 30 I chose out a sheltered spot where a clump of trees overhung a little brook. There, seated upon a bank of soft grass, I rested my weary limbs, and tried to wash the blood-stains from my person.

PERSIAN.

Paper-Setters—{ DR. E. D. ROSS, PH.D.
LT.-COL. D. C. PHILLOTT.

POETRY.

Examiner—SHAMS-UL-ULAMA MIRZA ASHRAF ALI.

The figures in the margin indicate full marks.

1. (a) Translate into English :—

لی سہجنت گنج خدا را کلید
گوهر آن گنج تو کردی پدید
از تو صلائی بالست آمده
نیست بمہمانی ہست آمدہ
غرہ ماہ از خم ابروی تست
طرہ شام از شکن موی تست
ماہ بطوق خدمت چون ہلال
شام بداغ خبشت چون بلال
نام تو ز اللہ بدو پایہ خاص
نامہ چارم ز تو با اختصاص
پرتو قد تو مشعل راہ ہمہ
ظہل لبوای تو پناہ ہمہ
فرش تو یزدان ز فلک ساختہ
تو ز گلیمی علم افراخ
سایہ خویش آنکہ نکردیش نثر
داشتیش از پی خورشید حشر
تا چو پیسوزیم دران آفتاب
خود فگنی سایہ بر اہل عذاب
بر عمل خویش نداریم امید
بر کرم تست ہزارا

(b) Notice the allusions in the second, fourth, sixth, seventh, and eighth *bais* of the above extract. 5

(c) What is *نامہ چارم*? Give the names of the other three *namahs* with those of the persons to whom they had special reference. 3

(d) Comment on the construction of *اعتمدید*. Give other instances of this form in use. State the rule with its technical name. 3

2. Explain fully :— 6

سکۃ، کارش بفرور و اصول
تابع قال الله وقال الرسول
عینی شریعت بطریقت درست
شرع اگر عین نباشد شرست
چرچه حق معرفت این فن ست
جمله حق المعرفتش روشن سنت

3. (a) Translate into English :— 6

بدو گفت کای بهترین بخت من سزاوار پیرایه تخت من
چه پرسی ز جان بجان آمده گلی در سموم خزان آمده
جهان شربت هرنیک از یخ سرشت بجز شربت ماکه بر یخ نبشت
ز بی آیم سینه سوزد درون قدم تا سرم غرق دریای خون
چو برقی که در ابر دارد شتاب لب از آب خالی و تن غرق آب
سبونی که سوراخ دارد نخست بموم و شیشم نگردد درست
جهان غارت از هر دری میبرد یکی آرد و دیگری میبرد
نه زو ایمن اینان که هستند نیز نه آنانکه رفتند رستند نیز
ببین روز من راستی پیشه کن تو نیز از چنین روز اندیشه کن
چو هستی به پند من آموزگار بدین روز نشاندت روزگار
نه من به زبهن شدم کاژدها بخاریدن سر نکردش رها
نه اسفندیار جهانگیر گرد که از چشم زخم جهان جان نبرد

(b) Relate, in Persian, the stories referred to in the last two lines. 4

4. Explain in Persian :—

3

مگو گوهر مردمی گشت خرد که در مردمان مردمی ها بمرود
اگر نقش مردم بخوانی شگرف بگوئی که مردم چنین ست حرف
بچشم اندرون مردمک را کلاه هم از مزدن مردمی شد سیاه

5. (a) How is *مافعی تمثالی* formed? (Give its *signs* that are in use in the Persian language. 4

(b) Form اسم *آله* of *پیمودن* - *گوفتن* - *ستردن* - *پرویزیدن* 4

6. (a) Translate into English :—

6

آنجا که جای نیست تو آنجا رسیدی
هرچ آن کسی ندید تو آن را بدیدی
ارکان ناگزیر سرائی شریعت اند
یازان چارگانه که شان برگزیده
فاروق را نواله رسانیدی بکام
ار هر طعام خوش که بخلوت چشیدی
صدیق را که زهرگزندش نمی کند
تریاکش از عنایت خود پروریدی
تا دامن قیامت در پای می کشد
پیراهنی که بر قد عثمان دریدی
بیناترا از علی نبود در جهان دین
کاندردو چشم او نفس خود دمیدند

(b) Explain the allusions in the fourth and fifth verses. 3

7. Write a letter of about twelve lines in Persian to your teacher, with appropriate address and subscription, dealing with the virtues of 'Industry.' 8

PERSIAN PROSE.

*Examiner—SHAMS-UL-ULAMA AHMAD.**The figures in the margin indicate full marks.*

1. Translate into English :—

12

رای دابشلیم گفت که در فواحي بصره جزیره بود بغایت خوش هوا و بیشه در نهایت لطافت و صفا - چشمهای زلال از هر طرفش روان و نسیم دلکش از هر جانبش وزان بود - از غایت خوبی او را بیشه فرح افزا میگفتند - و پلنگی بران بیشه فرمانروا بود که از هیبت او شیران شرزه بانگ نمیتوانستند بر آورد و ددان دیگر گرد آن نمیتوانستند گشت - مدتها دران بیشه بمراد دل گذرانیده هرگز صورت ناکامی روزگار ندیده - بچه داشت که عالم را بر روی او روشن میدید - و در آرزوی آن بود که چون بچه اش بسال در آید و دندان و چنگال بخون هزیران رنگین کند آن بیشه را بتصرف او گذارد و خود گوشه قناعت بگیرد - ناگاه بآرزوی نارسیده پلنگ را اجل در رسید - درندها که از قدیم خیال آن بیشه داشتند بیکبار قصد کردند - پلنگ بچه دید که طاقت مقاومت ندارد جلالی وطن شد و درمیان ددان نزاع افتاد - شیری خونریز بر همه غالب آمده بیشه را در تصرف خود آورد *

2. (a) Explain *او* in the following :—

2

دندان - زبان - ددان - دران - روان

(b) Explain in Persian the difference in meaning between

2

باد - هوا - نسیم

(c) Mark the vowel-points (حرکات) in—

2

شرزه - مقاومت - قناعت - لطافت

3. (a) Explain the difference in signification between—

2

پادشاه فرمود تا او را کشتند

and

پادشاه فرمود تا او را بکشند

(b) Give examples of امر مدامی and امر نهی.

2

4. Translate into English :—

15

الپ ارسلان پادشاهی بود بشمائل و خصائل معنوی آراسته و از ذائل دنیه پیراسته - در حسن اندام بر اقران و همگنان سبقت می برد و در شهامت ذات و خنوت فطری بر اهل زمان تفوق میبجست - ظلم از وی کمتر منقول است مگر در حق کسانی که معاندین دین میدانست که اگر دین آبا و اجداد خویش را رها و کیش پیغمبر عرب را اختیار نمیکرد قتل و تعذیب ایشانرا لازمه همت می شناخت - عمر الپ ارسلان در لشکر گذشت - کفایت امور ملک و کفایت جمهور ملت چنین که کلیه به رای و رویت وزیر مشهور خواجه نظام الملک مفعول بود - در انام وزارت وی ممالک الپ ارسلان هر روز نمایشی تازه و هر سال فزایشی بی اندازه داشت - بازار عدل و انصاف را رواجی بود مساجد و مدارس در هر شهر بر پای - و مردم را به تحصیل علوم ترغیب می نمود فقرا و ضعفا در کنف حمایت او در مهد امن و امان میزیستند - بیم کفایت و حسن درایت این وزیر صائب تدبیر بالجمله سکته ایران که زمان سلطنت وحشیان قاتار را از بدترین بلاها می پنداشتند از بهترین ایام شمرند *

5. The following to be answered in Persian :—

6

What do you know of the origin of the collection of fables called *Kitāb-i Kalīla va Damna*? Who first translated it into Persian?

6. (a) Give the singulars or plurals of the following :—

4

آبا - زمان - اقران - خصائل - عالم - صورت - نسیم - نواحی

(b) What is the difference between همکنان and ممکنان ?

1

7. - Translate into Persian :—

12

Among the works which have been written on the subject of the difference between the Soonee and Sheah sects, the latter esteem none more than a small tract, called 'Hussunneah,' composed by one of their most learned divines ; who, to mark his contempt for his adversaries, has made a female slave, whose name he has given to his work the successful champion of the tenets of his faith in a public dispute, supposed to have been held before the celebrated caliph, Haroun-ul-Rusheed. It appears impossible to convey a better idea of the arguments by which the Sheahs support the principal dogmas of their belief, or of the style in which such subjects are treated, than by giving a translation of a part of this popular work ; which, after shortly describing the history and character of Hussunneah, gives an account of the first day of her disputation before the Caliph of Bagdad.

The learned author informs us, ' that a merchant at Bagdad, when reduced to poverty from the persecution he had suffered on account of his religious persuasion, applied to a favourite and accomplished female slave to know what he should do to save himself from utter

PĀLI.

Paper-Setters— { THE RIGHT REV. R. S. COPLESTON, M.A.,
D.D.
HARINATH DE, ESQ., M.A. (Cal. and
Cantab.), M.R.A.S.

POETRY.

Examiner—DHARMANANDA KOSAMBI, ESQ.

The figures in the margin indicate full marks.

1. Translate into English :—

24

' Manujassa pamattacārino taṇhā vaddhati maluvā viya,
so palavatī hurāhuraṃ phalaṃ icchaṃ va vanasmi vānaro.
Yaṃ esā sahatī jammī taṇhā loke visattikā
sokaṃ tassa pavaddhanti abhivaddhaṃ va bīraṇaṃ.
Yo c'etaṃ sahatī jammaṃ taṇhaṃ loke duraccayaṃ
sokaṃ tamhā papatanti udabindu va pokkharā.
Taṃ vo vadāmi bhaddaṃ vo yāvant' ettha samāgatā ;
taṇhāya mūlaṃ khaṇatha usiratto va bīraṇaṃ,
mā vo nalaṃ va soto va Māro bhañji punappunaṃ.
Karotha Buddhavacanaṃ, khaṇo ve mā upaccagā,
khaṇātītā, hi socanti nirayaṃhi samappitā.
Pamādo rajo sabbadā, pamādānupatito rajo,
appamādena vijjāya abhaṇe sallam attano ti.'

2. Translate, parsing the italicized words :—

- (a) Selo yathā ekaghano vātona na samīrati,
evaṃ nindāpasamsāsu na *samiñjanti* paṇḍitā.
(b) Yo sahasaṃ sahasena saūgāme mānuse jīne
ekaṃ ca *jeyya-m-attānaṃ* sa ve saūgāmajuttamo.

3

6

- (c) Dighā jāgarato ratti, dīghaṃ santassa yojanaṃ, 5
dīgho bālānaṃ saṃsāro saddhammaṃ *avijānataṃ*.
(d) Vijayappamukhā sabbe taṃ upecca apucchisuṃ : 12
'Ayaṃ bho ko nu dīpo' ti, 'Lankādīpo' ti *abruvī*,
'na santi manujā ettha, na ca *hessati* vo bhayaṃ'
iti vatvā kuṇḍikāyaṃ te jalena *nisiñciya*
suttaṃ ca tesaṃ *hatthesu* laggetvā *nabhasāgamā*.
3. What do you know about Buddhaghosha ? 10

PĀLI PROSE.

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.),
M.R.A.S.

The figures in the margin indicate full marks.

1. Translate into English :—

12

Tena asāta-amadhura-saṃsaggena tāva madhuraphalo ambo[•]
tittako jāto nimba-panna-sadisa-raso. Amba-phalānaṃ tittakabhā-
vam űatvā uyyānapālo palāyi. Dadhivāhano uyyānaṃ gantvā am-
baphalaṃ khādanto mukhe pavittham ambayūsaṃ nimba-kasataṃ
viya ajjhoharitaṃ asakkonto kakkāretvā nīthubhi. Tadā Bodhi-
satto tassa attā-dhammānusāsako ahoṣi. Rājā Bodhisattaṃ āman-
tetvā 'Paṇḍita imassa rukkhassa porāṇaka-parihārato parihīnaṃ
n'atthi, evaṃ sante pi'ssa phalaṃ tittakaṃ jātaṃ, kinnu kāraṇaṃ' ti
pucchanto pathamaṃ gātham āha :

Vaṇṇa-gandha-rasūpeto ambāyaṃ ahuvā pure
taṃ va pūjaṃ labhamāno ken' ambo kaṭukapphalo 'ti.

2. Translate into English, giving the English equivalents of all the 12
technical terms and adding full notes on the subject-matter :—

Ekaṃ nāma kim ? Sabbe satta āhāraṭṭhitikā.
Dve nāma kim ? Nāmañca rūpañca.
Tini nāma kim ? Tisso vedanā.
Cattāri nāma kim ? Cattāri ariyasaccāni.
Pañca nāma kim ? Pañc' upādānakkhandhā.
Cha nāma kim ? Cha ajjhattikāni āyatanāni
Satta nāma kim ? Satta bojjhaṅgā.

3. Give in English the substance of the *Dhamma-cakka-pavattana-* 6
sutta.

4. Translate the following, adding grammatical notes on the 12
italicised words :—

- (a) Pucimaṇḍaparivāro ambo te Dadhivāhana
Mūlaṃ mūlena samsatṭhaṃ, sākāhā sākāhā *nisevare*.
(b) Nigrodham eva seveyya na Sākhaṃ upasaṃvāse
Nigrodhasmiṃ natam seyyo *yañce* Sākhasmiṃ jīvitante.
(c) Passa *sadhāya* silassa cāgassa ca ayaṃ phalaṃ
Nāgo nāvāya vaṇṇena saddham vaḥati upāsakaṃ.

5. Translate into Pali :—

12

- (a) He told the other monks that he had seen a lion coming, and

had tried to climb a tree lest he should be devoured, but that in doing so he broke a branch and fell to the ground.

(b) The king said : 'Sirs, hear me. This monk says that there is no such thing as personality. What do you say to such teaching ?'

(c) 'How did you come ?' I asked. 'I came,' he said, 'in a carriage as far as I could, and then walked.'

6. Illustrate the use of the following particles :—eva, kira, nāma, api.

PHYSICS.

Paper-Setters— $\left\{ \begin{array}{l} \text{A. MACDONELL, ESQ., M.A.} \\ \text{J. A. CUNNINGHAM, ESQ., B.A., A.R.C.Sc.I.} \\ \text{BABU RAMENDRASUNDAR TRIVEDI, M.A.} \end{array} \right.$

Head Examiner—DR. J. C. BOSE, C.I.E., M.A., D.Sc.

Examiners— $\left\{ \begin{array}{l} \text{W. H. EVERETT, ESQ., B.A., B.E., M.I.E.E.} \\ \text{RAI KUMUDINIKANTA BANERJEE, BAHADUR,} \\ \text{M.A.} \\ \text{BABU JYOTIBHUSHAN BHADURI, M.A.} \\ \text{,, JNANCHANDRA GHOSH, M.A.} \\ \text{,, HRIDAYCHANDRA BANERJEE, M.A.} \end{array} \right.$

All questions carry equal marks.

1. Define the term Centrifugal Force. Is it a correct term ? Give some examples.

2. The specific gravity of platinum is 22.07 and that of olive oil 0.91. Taking the weight of a cubic foot of water to be 1,000 ounces, find the loss of weight of 100 cubic inches of platinum when immersed in olive oil.

3. State the laws connecting the volume, pressure, and temperature of a gas.

A certain volume of air is at the melting temperature of ice. At what temperature will its volume be reduced to one-third, if the pressure is simultaneously quadrupled ?

4. Define the boiling-point of a liquid. How is it determined, and on what does it depend ?

5. Explain how evaporation produces a fall of temperature.

6. How has the velocity of light been determined ?

7. Illustrate by a diagram, with explanation, the formation of an image by a concave mirror.

8. The resin cake of an electrophorus is excited with a catkin. The metal cover is insulated and connected to a gold-leaf electroscope. Describe the effect on the gold-leaves when (a) the cover, being lifted by means of an insulating handle, is placed on the cake ; (b) is raised to a height without previously touching it ; (c) the cover placed on the cake is touched by the finger ; (d) the cover is raised again after touching it.

9. Describe experiments which show the mutual action between magnets and electric currents.

CHEMISTRY.

Paper-Setters— $\left\{ \begin{array}{l} \text{W. H. ARDEN WOOD, Esq., M.A., F.C.S.,} \\ \text{F.R.G.S.} \\ \text{BABU RAMENDRASUNDAR TRIVEDI, M.A.} \\ \text{E. R. WATSON, Esq., M.A., B.Sc.} \end{array} \right.$

Head Examiner—BABU RAMENDRASUNDAR TRIVEDI, M.A.

Examiners— $\left\{ \begin{array}{l} \text{RAI CHUNILAL BASU, BAHADUR, M.B., F.C.S.} \\ \text{DR. UPENDRANATH BRAHMACHARI, M.A., M.D.} \\ \text{BABU CHANDRABHUSHAN BHADURI, B.A.} \\ \text{B. N. DAS, Esq., M.A., B.Sc.} \\ \text{BABU CHUNILAL DE, M.A.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Explain clearly the meaning of the statement that matter is indestructible. What evidence can be brought forward in support of the statement? 7
2. The formula O_3 is assigned to the molecule of ozone. Give experiments showing the facts which justify this formula. 7
3. What are the chemical names and molecular formulae of the following substances:—oil of vitriol, Glauber's salt, muriatic acid, nitre, laughing-gas, fire damp? 6
4. Describe fully the changes that you will observe in the following cases:— 9
 - (a) A two-anna piece is thrown into nitric acid;
 - (b) A bit of phosphorus is thrown into a jar of chlorine;
 - (c) A few drops of a strong solution of ammonia are introduced into a jar containing hydrochloric acid gas;
 - (d) Sulphuretted hydrogen is passed into a solution of blue vitriol;
 - (e) Carbonic acid gas is passed into lime-water;
 - (f) A mixture of nitric oxide gas and carbon disulphide vapour is ignited.
5. Give a chemical method of distinguishing between the following gases:— 8
 - (a) Hydrogen and carbon monoxide;
 - (b) Hydrogen chloride and sulphur dioxide;
 - (c) Oxygen and nitrous oxide,
 - (d) Nitrogen and carbon dioxide;
6. Describe a method for the preparation of chlorine, including the precautions to be taken in carrying out the process. Give the important chemical and physical properties of chlorine. 8
Describe and explain the action which occurs when chlorine-water is added to a solution of potassium iodide which contains starch.
7. What is meant by the term 'water of crystallization'? What is the behaviour of deliquescent and efflorescent substances respectively when left exposed to the air? 7
8. One litre of hydrogen gas measured at 32°C . and 758 mm. pressure is burnt in excess of oxygen. What is the weight of water produced? 8

BOTANY.

(FOR FEMALE CANDIDATES.)

FIRST PAPER.

Examiner—P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.*The figures in the margin indicate full marks.*

1. Describe the given specimen. 12
2. You are given a number of leaves ; describe them with respect to mode of division and to the configuration of base, apex, and margin, and make neat pencil sketches of them. 12
3. *Either*— 12
Describe the various modes of placentation, giving at least one example in each case.
Or—
Describe the flower of a palm. Compare the floral diagram of a palm with that of a grass.
4. *Either*— 12
Describe and classify the more common types of inflorescences.
Or—
Describe some modifications of the foliage-leaf, the stem and the root, explaining, as far as possible, the purpose served by such adaptation.
5. Refer the given specimens to their natural orders. In each case point out those diagnostic characters by means of which each specimen can be most readily assigned to its respective order. 12

BOTANY.

(FOR FEMALE CANDIDATES.)

SECOND PAPER.

Examiner—S. C. MAHALANABIS, Esq., B.Sc., F.R.S.E.*The figures in the margin indicate full marks.*

1. 'All the organs borne by the stem and its branches are modifications of one leaf-type.' Give evidence in support of this theory. 10
2. The alternation of day and night and of winter and summer greatly influences the feeding processes in plants. What are the effects of this alternation ? 10
3. *Either*—
State what are the functions of—(a) the epidermis, (b) the root-cap, (c) the vessels, (d) the albumen of the seed.
Or—
Give the distinguishing characters of the following : (a) starch,

(b) aleurone grains, (c) chlorophyll grains. What becomes of the excreta of plants ?

4. What constitutes the food of plants ? How does a plant take 10 in its food ?

5. Give a general account of what you see when you examine a 10 transverse section of the stem of a dicotyledonous annual.

6. Referring to common Indian plants, explain the terms Natural 10 Order, Genus, and Species.

• HISTORY.

Paper-Setters— $\left\{ \begin{array}{l} \text{J. N. DAS-GUPTA, ESQ., B.A. (OXON), Bar-} \\ \text{at-Law.} \\ \text{C. H. BROWNING, ESQ., M.A.} \end{array} \right.$

Head Examiner—M. PROTERO, ESQ., M.A.

Examiners— $\left\{ \begin{array}{l} \text{BABU SANTOSH CHATTERJEE, M.A.} \\ \text{NIRMALCHANDRA SEN, ESQ., M.A., Bar.-at-Law.} \\ \text{BABU DHARMADAS BANERJEE, M.A.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Show clearly the influence of (a) Greek thought and (b) Greek 6 history on the civilization and history of modern Europe.

2. What is the significance of the word 'tyrant' in Greek history ? 6 State what you know of the Greek government by tyrants.

3. Give a brief outline of the course of the Peloponnesian War, 6 stating in full its causes and results.

4. 'Alexander the Great left no heir . . . but the Greek kingdoms 6 which arose after him are the dynasty which he founded.' Show (a) the extent of Alexander's dominions ; (b) the kingdoms into which they were divided on his death ; and (c) the lasting results of his conquests.

5. From what main sources is our knowledge of Greek history 6 derived ? State what you know of the great Greek historians.

6. Say what you know of the three tribes out of which the Roman 6 people were originally formed. Illustrate how the character of the Romans is seen in their religion.

7. What was Rome's first province, and how was it acquired ? 6 What was the plan adopted by Rome in the government of her conquered provinces ?

8. Explain the importance of the land question in Italy in the 6 time of the Gracchi. What did they aim at, and how are we to account for their failure ?

9. Draw an outline map, showing the extent of the Roman Empire 6 under Augustus. Illustrate the statement that 'the imperial system was in fact a military despotism under Republican forms ?

10. What were the circumstances which favoured the introduction 6 and spread of Christianity in the Roman Empire ?

LOGIC.

Paper-Setters— { BABU KALICHARAN BANERJI, M.A., B.L.
DR. P. K. RAY, D.Sc.

Head Examiner—DR. P. K. RAY, D.Sc.

Examiners— { BABU AMBIKACHARAN MITRA, M.A.
,, LALGOPAL CHAKRABARTI, M.A.
,, HIRALAL HALDAR, M.A.

The figures in the margin indicate full marks.

1. In what sense is Logic the 'science of sciences'? Explain, with illustrative applications, the fundamental principles of Deductive Logic. 5

2. Explain the distinction between (a) connotation and denotation, (b) definition and division, with reference to terms. Show that the connotation of a common term increases as its denotation decreases, and *vice versa*. 6

3. What is the nature of the logical copula? Explain and illustrate the different relations in which the predicate can stand to the subject. 5

4. Put the following propositions in logical form, and indicate their quantity and quality by symbols :— 8

- (a) Every mistake is not culpable.
- (b) He jests at scars who never felt a wound.
- (c) For this disease time is the only doctor.
- (d) Nothing is beautiful except truth.

Derive as many propositions as you can, by methods of Immediate Inference, from the propositions (a) and (b).

5. Define Figure, Mood, Major Premiss, Minor Premiss, Middle Term. 5

6. Prove the following syllogistic rules :—

- (a) If one premiss be particular, the conclusion must be particular. 6
- (b) In the second figure, the major premiss must be universal.

7. Test the following moods in every figure and find out in which figure each of them is valid :—AEE and EIO. 4

8. Give concrete examples of the moods Felapton and Dimaris, and reduce them to the first figure. 6

9. Draw the conclusion, if any, which follows from each of the following combinations of premisses :— 6

(a) No branch of science can be made absolutely perfect ; yet all branches of science are worthy of diligent culture.

(b) None but gentlemen are members of the Club ; all members of the Club are invited to compete.

10. Test the following arguments :— 9

(a) To be wealthy is not to be healthy ; not to be healthy is to be miserable ; therefore, to be wealthy is to be miserable.

(b) If he robs, he is not honourable. If he pays all his dues, he does not rob. Therefore, if he pays all his dues, he is honourable.

(c) All good shepherds are prepared to lay down their lives for the sheep ; few in this age are so prepared, therefore, few in this age are good shepherds.

PHYSIOLOGY.

Paper-Setters— $\left\{ \begin{array}{l} \text{S. B. MITRA, ESQ., B.Sc., M.B.} \\ \text{CAPT. D. MC CAY, M.D., M.Ch.,} \\ \text{B.A.O., R.U.I., I.M.S.} \end{array} \right.$

Examiner—S. B. MITRA, ESQ., B.Sc., M.B.

The figures in the margin indicate full marks.

1. Give a short general account of the composition of blood. 10
2. Describe the function of the diaphragm. Whence and how does the influence that makes it act, come to it? 10
3. How is urine secreted? 10
4. Give a short account of different digestive juice found in the alimentary canal. 10
5. Give a short account of the functions of the spinal cord. 10
6. Give a short account of the formation of the image of an object on the retina. 10

SANITARY SCIENCE.

Paper-Setters— $\left\{ \begin{array}{l} \text{DR. UPENDRANATH BRAHMACHARI, M.A.,} \\ \text{M.D.} \\ \text{,, F. PEARSE, M.D., D.P.H.} \end{array} \right.$

Head Examiner—S. C. MAHALANABIS, ESQ., B.Sc., F.R.S.E.

Examiners— $\left\{ \begin{array}{l} \text{DR. F. PEARSE, M.D., D.P.H.,} \\ \text{,, R. SEN, L.F.P.S., L.S.A.} \\ \text{,, PRANDHAN BOSE, M.B.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Describe how we breathe, and refer to the impurities in expired air. 10
2. Describe the different kinds of wells, mentioning their respective suitability as supplies of drinking water. 10
3. What are proteids and carbohydrates? Explain their values as foods. 10
4. What are the meanings of the following terms:—Epidemic, Endemic, Vital Statistics, Idiosyncrasy, Heredity, Ground water, Blood corpuscles, Disinfectant, Ventilation, Hygrometer. 10
5. Mention shortly some of the chief parasites which affect the human body, and the diseases to which they give rise. 10
6. Say what you know about domestic filters. 10

BENGALI COMPOSITION.

(OPTIONAL PAPER.)

Paper set by—BABU DINESCHANDRA SEN, B.A.*Examiners*— { BABU SARATCHANDRA SASTRI.
 ,, GIRINDRAKUMAR SEN, M.A.*The figures in the margin indicate full marks.**Answers to be always in Bengali.*

Write essays on any two of the following subjects :—

(a) The seasons of India—their duration—their bearing on domestic life, trade, and prices of articles—games and festivities of the seasons—their crops, fruits, and flowers—diseases peculiar to each season and rules of health to be observed to avoid them. 50

(b) The Bengali author you like best—reasons for your preference—his life—his principal works and their contents—his position in literature as compared with that of his contemporaries—his influence on the literature of his country. 50

(c) Your own native village—its situation and surroundings—its sanitation, water-supply, and drainage—means of communication—educational institutions—its past history—any objects of antiquarian interest that it may possess—its inhabitants—their education—their religion, customs, and amusements—any industry or produce for which the place may be noted—suggestions for improving its condition. 50

(d) Strength of character—how it helps to attain success in life—a man of ordinary talents with character compared with a man of genius without it—character more potent than wealth—its attendant virtues—perseverance—moral courage and self-help—the relation of character to spirituality—examples in illustration. 50

(e) The study of History—its influence on the progress of individuals and nations. Discuss the remark usually made that the Hindu mind is averse to the study of History. 50

HINDI COMPOSITION.

(OPTIONAL PAPER.)

Paper set by—LALA SITARAM, B.A.*Examiner*—BABU SOMNATH JHARKHANDI, B.A.*The figures in the margin indicate full marks.**Answers to be always in Hindi.*

Write essays on any two of the following subjects :—

(a) Charity—charity begins at home—Hindu indiscriminate charity lays the very foundation of national manliness, gives a pre- 50

mium to indolence and trains up men and women to the meanness of begging and not to the dignity of labour—the advantages of opening such institutions as schools and hospitals.

(b) 'Nothing is more wonderful than the completeness with which the poet (Sir Walter Scott) throws himself back into past ages and speaks and thinks like a minstrel of the seventeenth century.'—Illustrate the above by writing out the story of the *Lay of the Last Minstrel*. 50

(c) Health—proper diet—pure water—pure air—outdoor exercise—sedentary habits and their consequences—temperance—intemperance. 50

(d) Division of labour—choice of occupations—misapplication of labour—a constant division and change of occupation necessary in a prosperous community—evils of caste influence. 50

• URDU COMPOSITION.

(OPTIONAL PAPER.)

Paper set by—MAULAVI MAHAMMAD QASIM.

Examiner—MAULAVI MAHAMMAD MUSTAPHA KHAN,
M.A., B.L.

• *The figures in the margin indicate full marks.*

Answers to be always in Hindi.

Write essays in Urdu on any two of the following subjects :—

- | | |
|--|----|
| (a) On the advantages of imparting education through the medium of the student's own vernacular. | 50 |
| (b) On the influence of society on the character of men. | 50 |
| (c) On scientific education in India. | 50 |
| (d) On the study of History. | 50 |
| (e) On the advantages of human life. | 50 |
| (f) On trade. | 50 |

URIYA COMPOSITION.

(OPTIONAL PAPER.)

Paper set by—RAI RADHANATH RAY, BAHADUR, M.A.

Examiner—BABU ABHIRAM BHANJ, M.A., B.L.

The figures in the margin indicate full marks.

Write essays on any two of the following subjects :—

- (a) Temple structure in Orissa as in the great temples at Puri and Bhubaneshwar.—Its projections. Its pinnacles surmounted by a Kalas. The subsidiary porch structure called Jagamohan and the

two further structures called Natmandir and Bhogmandap. Courtyard with minor temples, entrance gates, surrounding walls, material used in construction, mode of building.

(b) Self-culture.—Its aims in the harmonious growth of our powers in all possible directions ; culture of body as the sacred habitation of the soul ; culture of mind including reason, memory and imagination and instruments of such culture ; culture of the moral faculty or conscience ; culture of the spirit or Godward faculty.

(c) Akbar.—His birth and succession. The chief events in his reign. His policy of conciliation* of Hindus. His organization of the Empire with the help of eminent Hindus and Mussulmans. His religious principles. His character.

B.A. Examination.

1907.

ENGLISH.

Paper-Setters— $\left\{ \begin{array}{l} \text{CHARLES H. TAWNEY, ESQ., C.I.E., M.A.} \\ \text{'J. MANN, ESQ., M.A.} \\ \text{REV. DR. J. MORRISON, M.A., D.D.} \end{array} \right.$

FIRST PASS PAPER.

FIRST HALF.

Examiners— $\left\{ \begin{array}{l} \text{REV. A. B. WANN, M.A., B.D.} \\ \text{,, S. L. THOMPSON, B.A., B.D.} \end{array} \right.$

The figures in the margin indicate full marks.

[Candidates are requested to use separate books for their answers to the first and second halves of the paper, and to write on the cover "First Half" or "Second Half" as the case may be.]

1. Explain fully the meaning of the following passages :—

- (a) A sceptre snatch'd with an unruly hand 6
Must be as boisterously maintain'd as gain'd ;
And he that stands upon a slippery place
Makes nice of no vile hold to stay him up :
That John may stand, then Arthur needs must fall ;
So be it, for it cannot be but so.
- (b) It is too late : the life of all his blood 5
Is touch'd corruptibly, and his pure brain,
Which some suppose the soul's frail dwelling-house,
Doth by the idle comments that it makes
Foretell the ending of mortality.
- (c) What relish is in this ? how runs the stream ? 5
Or I am mad, or else this is a dream :
Let fancy still my sense in Lethe steep ;
If it be thus to dream, still let me sleep !
- (d) Why have you suffer'd me to be imprison'd, 5
Kept in a dark house, visited by the priest,
And made the most notorious geck and gull
That e'er invention play'd on ? tell me why.

By what characters and under what circumstances are (a), (b) and (d) spoken ? 6

2. Give in your own words the account of King John's death followed by Shakespeare. 5
3. What conception have you formed of the character of Olivia ? 7
4. 'Richard, that robb'd the lion of his heart
And fought the holy wars in Palestine,
By this brave duke came early to his grave.'
- How far is this statement in accordance with fact ?
5. How did it come about that Antonio had enemies in Orsino's court ? 6

SECOND HALF.

Examiners—{ BABU HERAMBACHANDRA MAITRA, M.A.
,, DEBENDRANATH BASU, M.A.

1. Explain fully the meaning of the following passages :—
- (a) As Cesar he, ere long, to Gaul, 5
To Italy an Hannibal.
And to all states not free
Shall climacteric be.
- (b) Lift not thy spear against the Muses' bower ; 5
The great Emathian conqueror bid spare
The house of Pindarus, when temple and tower
Went to the ground.
- (c) In buskin'd measures move 5
Pale Grief, and pleasing Pain,
With Horror, tyrant of the throbbing breast.
- (d) E'en all at once together found 4
Cecilia's mingled world of sound.
- (e) At once I saw him far on the great Sea, 6
In silver-shining armour starry-clear ;
And o'er his head the Holy Vessel hung
Clothed in white samite on a luminous cloud.
2. Give a very brief account of the authors of the poems from which the following passages are taken :— 8
- (a) Gather ye rose-buds while ye may,
Old time is still a-flying :
And this same flower that smiles to-day,
To-morrow will be dying.
- (b) Stone walls do not a prison make,
Nor iron bars a cage.
- (c) The best laid schemes o' mice and men
Gang aft a-gley.
- (d) Thy needles, once a shining store,
For my sake restless heretofore,
Now rust disused, and shine no more.
3. Who was the 'owner of 'the pensive Selima' ? Describe her, 5
and relate how she came to her end.
4. Of what poem does J. Fletcher's 'Melancholy' remind you ? 6
Give a short analysis of this poem.
5. Describe, as far as possible, in Tennyson's words, the daily life 6
of the Monk Ambrosius.

ENGLISH.

SECOND PASS PAPER.

. FIRST HALF. .

Examiners— { M. GHOSE, ESQ., B.A. (OXON).
J. N. DASGUPTA, ESQ., B.A. (OXON), BAR-
-AT-LA W.

The figures in the margin indicate full marks.

[Candidates are requested to use separate books for their answers to the first and second halves of the paper and to write on the cover "First Half" or "Second Half" as the case may be.]

1. Illustrate, from the speech on Conciliation, the distinctive qualities of Burke's oratory. What was the position of the American question at the time when this speech was delivered ? 10
2. Sketch, after Burke, the character of Mr. Grenville. 8
How does Burke characterize the Chatham administration ?
3. On what grounds does Burke deprecate the use of force in dealing with the American Colonies ? State his arguments against the partial suspension of *Habeas Corpus*. 8
4. Discuss briefly the following statements :— 6
(a) Abstract liberty is not to be found.
(b) Civil wars strike deepest of all into the manners of the people.
5. Explain the following passages, showing their connexion with Burke's argument :— 18
(a) Your ministerial directors blustered like tragic tyrants here ; and then went mumping with a sore leg in America, canting and whining and complaining of faction.
(b) Fortunate man, he has lived to see it ! Fortunate indeed, if he lives to see nothing that shall vary the prospect, and cloud the setting of his day.
(c) To please universally was the object of his life ; but to tax and to please, no more than to love and to be wise, is not given to men.
(d) High and reverend authorities lift up their heads on both sides ; and there is no sure footing in the middle. This point is the great *Serbonian bog*.
(e) The general sense of mankind tells me, that those offences, which may possibly arise from mistaken virtue, are not in the class of infamous actions.
(f) Nothing in progression can rest on its original plan. We may as well think of rocking a grown man in the cradle of an infant.

SECOND HALF.

Examiners— { REV. FATHER R. X. CROHAN, S.J.
,, J. C. SCRIMGEOUR, M.A.

1. Give the substance (a) of Pope's appreciation of Shakespeare ; 6
(b) of Dr. Johnson's character of Pope.
2. Reproduce some of Lord Chesterfield's remarks on 'good company' ; and some of Goldsmith's remarks on 'national prejudices.' 6

3. Write notes on the following extracts :—

(a) Few men would envy the character which Cæsar gives of Cassius.

(b) Youth enters the world with very happy prejudices in her own favour.

(c) What the favourite of the King of Epirus said to his master may be applied to men in all the ordinary situations of human life.

(d) His treatment of Milton is unmerciful to the last degree, . . . Oh ! I could thresh his old jacket, till I made his pension jingle in his pocket.

4. Write an essay on one of the following subjects :—

(a) Man is the creature of habit.

(b) Languages are more properly to be called the vehicles of learning, than learning itself.

(c) Do the duty which lies nearest to thee. Thy second duty will already have become clear. The situation that has not its duty, its ideal, was never yet occupied by man.

(d) Honour and shame from no condition rise ;

Act well your part, there all the honour lies.

ENGLISH.

FIRST HONOUR PAPER.

Examiner—REV. J. EDWARDS, M.A. ‘

The figures in the margin indicate full marks.

1. Write explanatory notes on the following passages :—

(a) An if you do, you will but make it blush
And glow with shame of your proceedings, Hubert :
Nay, it perchance will sparkle in your eyes ;
And like a dog that is compell'd to fight,
Snatch at his master that doth tarre him on.

(b) *Oli.* Why, what would you ?
Vio. Make me a willow cabin at your gate,
And call upon my soul within the house ;
Write loyal cantons of contemned love
And sing them loud even in the dead of night ;
Halloo your name to the reverberate hills
And make the babbling gossip of the air
Cry out ‘ Olivia ’ !

(c) There let Hymen oft appear
In saffron robe, with taper clear,
And pomp, and feast, and revelry,
With mask, and antique pageantry ;
Such sights as youthful poets dream
On summer eves by haunted stream.

(d) With cedars chosen by his hand
From Lebanon he stores the land ;
And makes the hollow seas that roar
Proclaim the ambergris on shore.
He cast (of which we rather boast)
The Gospel's pearl upon our coast.

- (e) They would have thought who heard the strain 4
 They saw, in Tempe's vale, her native maids
 Amidst the festal-sounding shades
 To some unwearied minstrel dancing.
- (f) Our bonnie bairn's there, Jean, 4
 She was baith guid and fair, Jean ;
 O we grudged her right sair
 To the land o' the leal !
- (g) O, when we reach'd 6
 The city, our horses stumbling' as they trode
 On heaps of ruin, hornless unicorns,
 Crack'd basilisks, and splinter'd cockatrices,
 And shatter'd talbots, which had left the stones
 Raw, that they fell from, brought us to the hall.

2. Mention some emendations that have been proposed in the following passages, and give your reasons for approving or disapproving of them :— 8

- (a) If the midnight bell
 Did, with his iron tongue and brazen mouth,
 Sound on into the drowzy race of night.
- (b) Death, having prey'd upon the outward parts,
 Leaves them invisible, and his siege is now
 Against the mind.
- (c) O, it came o'er my ear like the sweet sound
 That breathes upon a bank of violets,
 Stealing and giving odour !
- (d) Though our silence be drawn from us with ears, yet peace.

3. What effect does Milton consider that the birth of Christ produced upon the heathen oracles ? Is Milton's view correct ? 4

4. What is the leading idea of 'The Retreat,' the only poem selected by Palgrave from the works of Vaughan the Silurist ? 4

5. 'Sweet are the uses of Adversity.' Illustrate this maxim from one of Gray's poems. 3

6. Which do you consider to be the most interesting character in King John ? Give reasons for your opinion. 4

7. Some critics think that they detect a certain shallowness in the character of Orsino. How far do you agree with them ? 4

8. 'And four great zones of sculpture, set betwixt 4
 With many a mystic symbol, gird the hall ;
 And in the lowest beasts are slaying men,
 And in the second men are slaying beasts,
 And on the third are warriors, perfect men,
 And on the fourth are men with growing wings.'

What do these four zones represent ?

9. Write brief notes on the customs referred to in the following passages :— 12

- (a) He and his toothpick at my worship's mess.
- (b) Retaining but a quantity of life,
 Which bleeds away, even as a form of wax
 Resolveth from his figure 'gainst the fire.
- (c) And hang a calf's-skin on those recreant limbs.
- (d) He's a coward and a coystroll that will not drink to my niece
 till his brains turn o' the toe like a parish-top.
- (e) Like a pedant that keeps a school i' the church.
- (f) I will be strange, stout, in yellow stockings and cross-gartered.

10. In what sense does Shakespeare use the following substantives :
--hatch, stuck, testrill, rudesby, mutines ?

11. Discuss the derivation and meaning of the word 'Grail.'

How is the legend of the Holy Grail connected with Glastonbury ?

12. What is the original meaning of the term 'Idyll' ?

How has Tennyson extended it ?

13. Write a life of the poet from one of whose works the following passage is taken :—

Sydneian showers
Of sweet discourse, whose powers
Can crown old Winter's head with flowers.

14. Sir Toby uses 'thinfaced knave' as a term of reproach. Illustrate this from King John.

ENGLISH.

SECOND HONOUR PAPER.

Examiner—H. M. PERCIVAL, ESQ., M.A.

The figures in the margin indicate full marks.

1. Wherein lies the permanent value of Burke's speeches and writings on politics ? Illustrate from your texts. 9
2. Reproduce the substance of Burke's sketch of Mr. Townshend. 6
3. (a) 'In different periods of the dispute, different methods of reconciliation were to be pursued.' Illustrate this statement. 8
- (b) What does Burke say of the influence of legal studies on the temper of the American Colonies ?
4. Discuss briefly :— 9
 - (a) Refined policy has ever been the parent of confusion.
 - (b) Whilst *manners* remain entire, they will correct the vices of law, and soften it at length to their own temper.
 - (c) We are not disarmed by being disencumbered of our prejudices.
5. Annotate the following passages :— 24
 - (a) You are therefore at this moment in the awkward situation of fighting for a phantom ; a quiddity ; a thing that wants, not only a substance, but even a name ; for a thing which is neither abstract, right, nor profitable enjoyment.
 - (b) It did so happen that persons had a single office divided between them, who had never spoken to each other in their lives, until they found themselves, they knew not how, pigging together, heads and points, in the same truckle-bed.
 - (c) You have, indeed, winged ministers of vengeance, who carry your bolts in their pounces to the remotest verge of the sea. But there a power steps in, that limits the arrogance of raging passions and furious elements.
 - (d) You have before you the object, such as it is, with all its glories, with all its imperfections on its head. You see the magnitude ; the importance ; the temper ; the habits ; the disorders.
 - (e) If the bloody fields, which they saw and felt, are not sufficient to subdue the reason of America, it is not the judicial slaughter which is made in another hemisphere, that will ever reconcile them to the British government.

(f) So truly has prudence (constituted as the god of this lower world) the entire dominion over every exercise of power committed into its hands; and yet I have lived to see prudence and conformity to circumstances wholly set at nought in our late controversies.

(g) There are people who have split and anatomized this doctrine of free government, as if it were an abstract question concerning metaphysical liberty and necessity; and not a matter of moral prudence and natural feeling.

6. Reproduce the substance of Burke's panegyric on Fox. 6

Explain—His are faults which might exist in a descendant of Henry the Fourth of France, as they did exist in that father of his country.

7. Mention the advantages which, according to Hume, resulted from the discovery of a copy of the *Pandects*. 5

8. Reproduce some of Horace Walpole's remarks on Lord Herbert of Cherbury. Explain—To his astonishment the reader will find that the History of Don Quixote was the Life of Plato. 6

9. "Sir Joshua Reynolds calls Michael Angelo the 'Homer of Painting.'" Interpret this, and give the principal points of Sir Joshua's estimate of Michael Angelo. 6

10. Write a summary of Gibbon's character of the Emperor Julian. 6

11. Annotate :— 15

(a) The shepherd in Virgil grew at last acquainted with Love, and found him a native of the rocks . . . The notice which you have been pleased to take of my labours, had it been early, had been kind.

(b) Our modern eloquence is of the same kind or species with that which ancient critics denominated Attic eloquence.

(c) Shimei is the barometer of every man's fortune.

(d) Those are most apt to boast of national merit, who have little or no merit of their own to depend on.

(e) I know not but what one might search these eight volumes with a candle, as the prophet says, to find a man, and not find one, unless perhaps Arbutnot were he.

(f) I have presumed to mark the moment of conception: I shall now commemorate the hour of my final deliverance.

ENGLISH.

THIRD HONOUR PAPER.

Examiner—H. M. PERCIVAL, ESQ., M.A.

The figures in the margin indicate full marks.

1. Rewrite, line by line, in modern English as closely as modern idiom permits :—

(a) One day in doubt I cast for to compare

Whether in beauties glorie did exceede :

A Rosy girlond was the victors meede.

Both seemde to win, and both seemde *won* to bee,

So hard the discord was to be agreede.

Fraelissa was as faire as faire mote bee,

And ever false *Duesssa* seemde as faire as shee.

- (b) 'Ye both *forwearied* be : therefore, a while
I read you rest, and to your bowres recoyle.'
Then called she a *Groome*, that forth him ledd
Into a goodly lodge, and gan despoile
Of puissant armes, and laid in easie bedd.
Has name was meeke Obedience, rightfully *aredd*. 3
- (c) Behold ! I see the *haven* nigh at hand 2
To which I meane my wearie course to bend ;
Vere the maine shete, and beare up 'with the land,
The which afore is fayrly to be kend.

Add brief notes to the words italicized in these passages. 2

2. What in Book I of *The Faerie Queene* are the chief symbolismes
of the oneness, simplicity, and certainty of Truth ? 6
3. Explain how the Redcrosse Knight is finally identified with St.
George of England, and give an account of his adventures in Book I
subsequent to that point. 4

4. Paraphrase closely the following passage— 7

Yet listen, ye who will, whilst I bring proof
How ye, perforce, must be content to stoop :
We fall by course of Nature's law, not force
Of thunder, or of Jove. Great Saturn, thou
Hast sifted well the atom-universe ;
But for this reason, that thou art the King,
And only blind from sheer supremacy,
One avenue was shaded from thine eyes,
Through which I wandered to eternal truth.

Give the substance of the 'eternal truth' and the illustrations
of it, as set before Saturn and his 'brethren Gods.'

5. In Book III of *Hyperion*, we read— 3

'With solemn step an awful Goddess came,
And there was purport in her looks for him,
Which he with eager guess began to read,
Perplexed.'

What were the 'purport in her looks' and the underlying significance of the meeting of those two ?

6. 'The lines, "In Imitation of Spenser," bear direct testimony
to the deep impression made upon Keats by Spenser.' Point out, with
as definite references as possible, both the similarities and dissimilarities
between the two poets. 5

7. The name of Keats does not occur in *Adonais*. Apart from
references to the hero's youth and the sepulchre of the hero at Rome,
how is the poem specially applicable to Keats ? 6

8. Add brief explanatory notes to the following passages :— 4

- (a) He died
Who was the sire of an immortal strain,
Blind, old, and lonely, when his country's pride
The priest, the slave, and the liberticide,
Trampled and mocked with many a loathed rite
Of lust and blood.

- (b) All stood aloof, and at his partial moan
Smiled through their tears ; well knew that gentle band
Who in another's fate now wept his own ;
As in the accents of an unknown land
He sang new sorrow.

9. Rewrite in other words, line by line, the following passages :— 8

- (a) Three hosts combine to offer sacrifice ;
 Three tongues prefer strange orisons on high ;
 Three gaudy standards flout the pale blue skies ;
 The shouts are France, Spain, Albion, Victory !
 The foe, the victim, and the fond ally
 That fights for all, but ever fights in vain,
 Are met.
- (b) Fair Greece ! sad relic of departed worth !
 Immortal, though no more ; though fallen, great !
 Not such thy sons who whilome did await,
 The hopeless warriors of a willing doom,
 In bleak Thermopylae's sepulchral strait.

Explain the historical juncture referred to in the first passage.

10. Justifying his use of the Spenserian stanza, Byron quotes 8
 with approval the opinion that in that measure a poet may give full
 scope to his inclination and be either droll or pathetic, descriptive or
 sentimental, tender or satirical, as the humour strikes him, the measure
 admitting equally all these kinds of composition. Illustrate these
 several moods from as many sections or stanzas of Cantos I and II of
Childe Harold, and quote one or more illustrative lines in each case.

11. Describe the occasions, themes, and metres of the two songs 5
 in Canto I of *Childe Harold*, and show that their feeling is personal
 to Byron himself.

12. What is the general character of the Essays of Bacon which 7
 appeared for the first time in the 1625 edition ? Name three of them.
 How may the new essays be associated with the corresponding
 period of Bacon's career ?

13. Bacon views men as useful in the accomplishment of life's aims 8
 or as obstacles in the way. Illustrate this from the Essays.

14. Reproduce in your own words the substance of the Essay Of 7
Nature in Men.

15. Supply notes or translations to the following passages :— 12

(a) Prefaces, and Passages, and Excusations and other Speeches
 of Reference to the Person, are great waste of Time ; And though they
 seeme to proceed of Modesty, they are Bravery. Yet beware
 of being too Materiall, when there is any Impediment or Obstruction
 in Mens Wils.

(b) The Honourablest Part of Talke, is to give the Occasion ;
 And againe to Moderate and passe to somewhat else ; For then a Man
 leads the Daunce.

(c) But because, there is in Man, an Election touching the Frame
 of his Minde, and a Necessity in the Frame of his Body, the Starres
 of Naturall Inclination, are sometimes obscured, by the Sun of Dis-
 cipline, and Vertue.

(d) The Even Carriage betweene two Factions, proceedeth not
 alwaies of Moderation, but of a Trueneesse to a Man's Selfe, with End
 to make use of both.

ENGLISH.

FOURTH HONOUR PAPER.

Examiner—REV. J. EDWARDS, M.A.

The figures in the margin indicate full marks.

1. Give five examples of the passing of Latin words into Anglo-Saxon through the medium of the language of the early Britons, and point out therefrom the character of the Roman influence upon Britain. 4
2. Account for the dialectal character of the English Literature between A.D. 1100 and A.D. 1350. Give several illustrations of the dialectal differences. 5
3. Trace and illustrate the history of the English letter *y* and its sounds. 4
4. Give reasons for the statement that the personal pronouns are symbolic not presentive words. 3
5. Add philological notes to the following:—*record* and *récord*; *duh* (preterite of *dig*); *Chamberlain*; *fairy*; *chick*; *colourable* (in 'a colourable excuse'); *ado*: *also*. 4
6. Discuss how far the syntax of the following sentence is flat or flexional or phrasal—
'The plowman homeward plods his weary way.' 5
7. Write a short account of Chaucer and justify the statement that with him English Literature enters upon a new era. 5
8. Write a short history of the English Drama from its first crude forms up to A.D. 1564. 6
9. Briefly characterize the chief essayists of the first sixty years of the eighteenth century. Name the chief periodicals they were severally associated with and indicate the place of these periodicals, severally, in the life of their day. 5
10. Name and characterize briefly five noteworthy works of prose fiction, by as many authors, published between the years 1755 and 1815. 5
11. Write short notes on—The Anglo-Saxon Chronicle, Geoffrey of Monmouth, William Caxton, Every Man in his Humour, John Evelyn, Night Thoughts, English Bards and Scotch Reviewers, Ruskin. 4
12. Write an essay upon *any one* of the following subjects:— 50
 - (a) Man's laughter.
 - (b) The scientific spirit and the poetic spirit.
 - (c) 'In studying men, we must not regard them as chess-board pieces with fixed values.'
 - (d) The pros and cons of a Phonetic System of English spelling.

PHILOSOPHY.

Paper-Setters— { BABU KALICHARAN BANŪRJI, M.A., B.I.
 ,, BRAJENDRANATH SIL, M.A.
 ,, BINAYENDRANATH SEN, M.A.

FIRST PASS PAPER.

[Candidates are requested to use separate books for their answers to the first and second halves of the paper, and to write on the cover "First Half" or "Second Half," as the case may be.]

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—REV. J. LAMB, M.A.

1. What different kinds of Sensation are comprehended under Touch and Sight respectively ? Indicate in a general way the process of their elaboration into tactual and visual perceptions. Illustrate your answer by referring to the desk or any other object before you. 10
2. State accurately the laws of Suggestion in their most generalized forms, and examine their mutual relations. Apply the principle of contiguous integration to the explanation of (a) idec-verbal trains, and (b) the representation of time-order. 10
3. Explain the formation of Concepts, and distinguish precisely between a concept, a generic idea, and a representative geometric diagram (e.g., of a triangle). 10
4. Give a psychological account of the ideas of Substance, Cause, and Power ; and explain with their help the growth of the idea of the world in the individual mind. 10
5. Define the province of Logic in relation to Truth and Knowledge. Explain and illustrate the relation of Logic (a) to Psychology, and (b) to Metaphysics. 10

SECOND HALF.

Examiner—P. K. SEN, Esq., M.A., LL.B.

1. Analyse the scientific conception of a Cause. Point out the particular aspect of Causation on which each of the Experimental Methods is based. 10
2. Explain the canon of the Double Method of Agreement, and illustrate your answer by a concrete example. How is Plurality of Causes counteracted by the Double Method ? 10
3. How is scientific explanation related to Deduction and Induction ? What part does Hypothesis play in such explanation ? What are the marks of legitimacy in a hypothesis, as distinguished from the conditions of proof ? 10
4. Explain and illustrate the bearings of Definition and Classification on Generalization. 10
5. State the ultimate grounds (a) of Deduction, and (b) of Induction. Is it possible to reduce Deduction to Induction, or *vice-versa* ? 10

PHILOSOPHY.

SECOND PASS PAPER.

[Candidates are requested to use separate books for their answers to the first and second halves of the paper, and to write on the cover "First Half" or "Second Half," as the case may be.]

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—REV. W. S. URQUHART, M.A.

1. Indicate the place of Feeling in a healthy human constitution, noticing the advantages and disadvantages of strong emotional susceptibilities. 14

Analyse the feeling of Love of Approbation.

2. Explain the psychological peculiarities of Habit, and show how far, in the process of mental development and education, it is (a) a help, and (b) an obstruction. 12

3. Give an analysis, purely from a psychological point of view, of the phenomenon known as an exercise of Free Will. 12

4. How would you characterize Ethics as a Science? Is it an exact Science? Is it a practical Science? Is it a Science simply of actual facts? What is the use of the Science of Ethics? 12

SECOND HALF.

Examiner—BABU BINAYENDRANATH SEN, M.A.

1. With reference to the question of the proper object of moral judgment, clearly set forth the relation between what a man *is* and what a man *does*, and the bearing of each upon such judgment. 13

2. State and explain the nature of Conscience from any two different points of view. 12

3. Exhibit the mutual relation between the Moral Sentiment, Moral Obligation, and the Sanctions of Morality. 13

4. Give a concise exposition of the Ethical Theory known as Hedonism, noticing its different varieties. 12

PHILOSOPHY.

FIRST HONOUR PAPER.

Examiner—BABU BRAJENDRANATH SIL, M.A.

The figures in the margin indicate full marks.

[Only SIX questions to be answered, THREE from Group A, of which the first must be one, and THREE from Group B.]

A.

1. Analyse Muscular Sensibility into its different elements, and point out their contribution to tactual and visual perception. Explain the nature of local signs, and their import in the development of the idea of Space. Notice the elements that enter into the perception of distance and solidity. 14

2. Distinguish carefully between concept and judgment, and discuss the question of their relative priority. Is a concept a mere elaboration of a percept? Does Conception imply any advance upon Representation? Give a psychological as distinguished from a logical analysis of the fundamental type of Reasoning. 13

3. Exhibit in a general way the operation of contiguous integration, assimilation, and representation, in the development of the individual consciousness, and illustrate your answer by tracing the origin and growth of the idea of (a) Matter and (b) Time. 13

4. Write a brief analytical note on either (a) or (b) :— 13

(a) Think of a word, and abandon yourself for a moment to the train of ideas suggested by it.

Note the connecting links, and refer them to the laws of Suggestion.

Think of the same word, and try to form with it an intelligible sentence bearing on your present situation.

Note the suggestions in this case, and explain their difference from the previous series.

OR,

(b) Think of a railway journey.

Note the successive images called up in your mind. What conclusion do you form as to the character of your ideation, (1) visual, (2) auditory, and (3) motor?

B.

1. Explain the division of Logic into Formal and Material, and apply the distinction to both Deduction and Induction, pointing out the relation of the Formal to the Material type in each case. From this point of view, explain the value and functions of the Syllogism as well as of Inductive Inference. 20

2. Explain and illustrate the Plurality of Causes and the Intermixture of Effects. Show how far they frustrate the Experimental Methods, and point out the remedy in each case. In this connexion, explain and illustrate the utility of the Deduction Method. 20

3. Clearly explain the principles of scientific Definition, and show their bearings on scientific Classification. How would you proceed (a) when defining a particular group of animals, e.g., the Vertebrata, and (b) when dividing the same group? Indicate the importance of 20

Definition and Classification for the purposes of scientific Induction. Is the Division of Mind into Knowing, Feeling, and Willing, an instance of scientific Classification ?

4. Exhibit the logical method involved in any *three* of the following, pointing out the logical warrant in each case :—

(a) An inquiry into the cause of the unhealthiness of a particular month in a particular locality.

(b) A mathematical induction, *e.g.*—

$$1 + 2 + 3 + 4 + \dots + n = \frac{n(n+1)}{2}$$

(c) The proof of a political maxim, *e.g.*, that democracy tends to degenerate into a tyranny.

(d) The explanation of facts of which we can have no direct consciousness, *e.g.*, of Animal Instinct.

(e) The argument from Design, in proof of the existence of God.

(f) An estimate of probability, *e.g.*, the prospective length of life at a particular age.

PHILOSOPHY.

SECOND HONOUR PAPER.

Examiner—BABU JNANRANJAN BANERJEE, M.A.

[Only FIVE questions to be attempted : TWO from Group A, and THREE from Group B. Each question carries 20 marks.]

A.

1. What is meant by the 'diffusive effect' of an Emotion ? What do you understand by a fine, sensitive nature ? Explain the reaction upon Feeling of its normal physiological expression, and illustrate it with reference to the feeling of wounded self-respect, *e.g.*, in the case of a school-boy unjustly punished before the whole class.

Distinguish, in this connexion, between the absence of sensibility and the voluntary mastery over expression.

2. Give an analysis of the phenomenon of Sympathy, stating its conditions, peculiarities, tendencies, and effects.

3. Give a clear exposition of Instinct, and what you understand by the purposiveness of Instinct. Distinguish between biological and psychological purposiveness, and explain the relation between the two in the development of volitional power.

4. Distinguish between power of Decision and strength of Resolution, and explain, with illustrations, the conditions, intellectual and otherwise, upon which each depends.

5. To what extent is Belief under the control of the Will ? What is the relation of Belief to Action ? Illustrate your answer.

B.

6. Expound critically—(a) the psychological, and (b) the ethical doctrines involved in the following :—

Within himself (man)

The danger lies, yet lies within, his power :
Against his will he can receive no harm
But God left free the will, for what obeys
Reason, is free.'

7. Is the sense of Obligation possible except on a basis of the sense of Shame and Fear? Does moral progress imply the disappearance, or growth, or refinement of the latter sense? Discuss the question.

Has the sense of Obligation any necessary *personal* implications? If so, explain their significance in relation to—(a) Self, (b) Society, (c) God.

8. What do you understand by the 'Pure Idea of Duty'? Give a critical exposition of the theory with respect to it as held by—(a) Kant, (b) J. S. Mill.

9. Can there be such a thing as *collective* responsibility from an ethical point of view? With reference to the relation between the individual and society, discuss in what sense and how far—(a) Society is *responsible* for the sins of the individual, (b) the individual is *responsible* for the sins of Society.

10. In the light of any general scheme of Virtues and Duties that you approve of, give a classification, on some scientific principle, of the Virtues and Duties of Student life.

PHILOSOPHY.

THIRD HONOUR PAPER.

Examiner—BABU BRAJENDRANATH SIL, M.A.

The figures in the margin indicate full marks.

ONLY FIVE questions are to be answered, of which the FIFTH must be one.

A.

1. Give a concise account of the inductive method as propounded by Bacon, and estimate his importance in the history of philosophy. 15

2. Expound the method of Descartes, and give a sketch of his theory of psychology. Indicate the defects of his system. 15

3. Expound Locke's theory of knowledge, and estimate his merits as a critical philosopher. 15

4. Give a sketch of Berkeley's idealism. 'Without Berkeley there had been no Hume, as without Hume, no Kant.' Elucidate by a connected note. 15

5. What are the fundamental notions of Kant's philosophy? Expound its chief propositions and results. 15

6. Cousin's 'principal effort was,' it is said, 'to find a middle term between the Scotch and the German philosophy.' Explain by reference to his philosophy. 15

7. John Stuart Mill is said to have completed the scepticism of Hume. Examine by reference to his doctrines. 15

B. (SPECIAL.)

ONLY TWO questions are to be answered, of which the EIGHTH must be one.

8. Expound Leibnitz's view of the universe as a hierarchy of individual beings, exhibiting, in full, the nature of his created monads, and comparing them with the Greek atoms. 13

9. What is the relation of Leibnitz's uncreated monad to his created monads? Consider the difficulty it raises in reconciling his monadology with his theism. 12

10. Give a critical exposition of Leibnitz's doctrine of 'the best of all possible worlds,' and its applications. 12

PHILOSOPHY.

FOURTH HONOUR PAPER.

Examiner—BABU JNANRANJAN BANERJEE, M.A.

The figures in the margin indicate full marks.

ONLY SEVEN questions are to be answered, of which the FIRST must be one.

1. Discuss the true method of defining Religion. What are the philosophical implications of Religion ? 16
2. Present the teleological argument for the existence of God, and examine its validity. 14
3. Give an account of the more important views taken of the nature of God. State and justify your own view. 14
4. Is Personality reconcilable with the Absolute and the Infinite ? 14
5. Discuss the bearing of the doctrine of Relativity on our knowledge of theological truth. 14
6. Is freedom of the will an essential element of Theistic belief ? 14
7. Examine the Inference from the Finite mind to the Infinite mind. 14
8. Is Creation inconsistent with Evolution ? 14
9. Are the attributes of God different from man's, only in degree, or also in essence ? 14
10. Can science negative the idea of immortality ? 14

PHYSICS AND CHEMISTRY.

Paper-Settlers in Physics— $\left\{ \begin{array}{l} \text{G. W. KÜCHLER, Esq., M.A.} \\ \text{J. A. CUNNINGHAM, Esq., B.A.,} \\ \text{A.R.C.Sc.I.} \\ \text{REV. FATHER VAN NESTI, S.J.} \end{array} \right.$

Paper-Settlers in Chemistry— $\left\{ \begin{array}{l} \text{P. MUKERJEE, Esq., B.Sc., M.R.A.S.} \\ \text{RAI CHUNILAL BASU, BAHADUR, M.R.,} \\ \text{F.C.S.} \\ \text{E. R. WATSON, Esq., M.A., B.Sc.} \end{array} \right.$

FIRST PASS PAPER.

Examiners— $\left\{ \begin{array}{l} \text{P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.} \\ \text{D. N. MALLIK, Esq., B.A., B.Sc.} \end{array} \right.$

PHYSICS.

The figures in the margin indicate full marks.

1. Describe in detail how you would determine experimentally Young's modulus for a metal wire, and deduce the formula by which you would reduce your observations. 10

2. Explain the existence of loops, nodes, and beats, with graphic representations in each case. 9
3. Find the magnifying power of a simple lens of one-inch focal length, placed close in front of an eye whose distance of distinct vision is ten inches. Illustrate with a figure. 10
4. Give a general explanation of Fraunhofer's lines in the solar spectrum, and describe an experiment to verify the explanation. 10
5. If the coefficients of cubical expansion of glass and mercury are 0.000025 and 0.00018 respectively, what fraction of the volume of a glass vessel should be filled with mercury in order that the volume of the empty part should remain constant when the glass and mercury are heated to the same temperature? 9
6. Define the critical point of a fluid. Give a rough sketch of, and point out the differences between, the forms of the isothermals of carbon dioxide above and below its critical point. 10
7. Two insulated brass plates, a good way apart and connected by a fine wire, are electrified and then discharged. They are next electrified to the same degree as before, but before being again discharged, they are moved so as to be in contact with each other—face to face. On now discharging the plates what difference would you expect to find in the energy of the discharge? Account for the difference if any. 10
8. Two Leyden jars are exactly alike, except that in one the tinfoil coatings are separated by glass and in the other by ebonite. A charge of electricity is given to the glass jar and the potential of its inner coating is measured. The charge is then shared between the two jars, and the potential falls to 0.6 of its former value. If the specific inductive capacity of ebonite be 2, what is that of glass? 11
9. The E. M. F. of a battery is 18 volts and its internal resistance is 3 ohms. The difference of potential between its poles, when they are connected by a wire *A*, is 15 volts, and falls to 12 volts when *A* is replaced by another wire *B*. Compare the amounts of heat developed in *A* and *B* in equal times. 11
10. Two pieces of steel, of which one is a little longer than the other, are magnetized so that when attached by their centres to a piece of wire and suspended so that both are horizontal and in the same vertical plane, the combination is astatic. Will it be astatic if it be suspended by its centre of gravity so that the magnets are in a horizontal plane? Give your reasons. 10

PHYSICS AND CHEMISTRY.

SECOND PASS PAPER.

CHEMISTRY.

Examiners — { E. R. WATSON, ESQ., M.A., B.Sc.
 { DR. W. A. K. CHRISTIE, PH.D.

The figures in the margin indicate full marks.

1. Give practical details of experiments necessary to establish the molecular formula, NH_3 , for ammonia-gas. 14

2. Give the chemical names and formulæ of the following substances, and describe their properties; also indicate their chief uses in the laboratory and in the arts :—(a) pyrolusite, (b) white arsenic, (c) blue vitriol, (d) corrosive sublimate, (e) gypsum. 15
3. Nine grammes of carbon are burnt in an excess of carbon dioxide gas: calculate the weight of carbon monoxide produced and the volume of the latter gas (carbon monoxide) at 15°C. and under 740 mm. pressure. 14
4. How is gold extracted from its ores by the amalgamation and cyanide processes? What do you understand by the term '18 carat-gold.' and how would you extract pure gold from such an alloy? 14
5. How are the trichloride, the pentachloride, and the oxychloride of phosphorus prepared, and how do they act on water? Give equations. 14
6. Describe the preparation of a solution of hydrogen peroxide. State the properties and uses of the substance, and give the tests for it. Explain, giving examples, how hydrogen peroxide can act both as an oxidizing and as a reducing agent. 15
7. Define alums and pseudo-alums. How is common alum prepared from alum-shale? Give the formulæ of ammonium-alum, potassium-alum, and chromium-alum. State what happens when ammonium-alum is ignited: give equation. 14

PHYSICS AND CHEMISTRY.

FIRST HONOUR PAPER.

PHYSICS.

Examiner—P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.

The figures in the margin indicate full marks.

1. How do you explain the surface tension of liquids? Give a few illustrations of it. 10
What is the value of the capillary pressure due to that tension? Deduce from it the behaviour of a drop of water and of a drop of mercury in conical tubes of small angle placed horizontally and vertically.
2. Explain the occurrence of beats. How comes it that open organ pipes nearly an octave apart give beats? How is it that feeble beats are also heard even from two stopped pipes, or two tuning forks, when nearly an octave apart in pitch? 8
3. Describe Kundt's method of determining the velocity of sound in gases. What do you observe when the tube contains a gas of density 1.5, and the rod, made of a metal carrying the sound ten times as quickly as air, enters one quarter of the tube? 12
4. A prism has a refractive angle of 60°; the index of refraction of the substance is 1.5. Find the conditions of emergence from the face AC of a ray falling on the face AB. If the ray emerges, what is the value of the angle of emergence in terms of the angle of incidence? 12
When will the ray be reflected internally so as to come out at the face AB? (Only the faces AB and AC are to be taken into account.)
5. State the principal defects of the human eye and describe the 10

contrivances invented to remedy them. Draw for each case a sketch of the path of a ray with and without the application of glasses.

6. Describe the terrestrial telescope and explain the path of a ray (with sketch). 10

7. Explain the effects of gratings in the transmission of light. 10

8. What is meant by plane, by elliptical, and by rotatory polarization? Explain the occurrence of each one according to the undulatory theory of light. 12

9. Explain the general process of scientific induction; deduce from it what kind of certitude scientific induction can lead to. Keeping those considerations in view, discuss carefully the evidence in favour of the wave theory in the case of light. 16

PHYSICS AND CHEMISTRY.

SECOND HONOUR PAPER.

PHYSICS.

Examiner—D. N. MALLIK, ESQ., B.A., B.Sc.

The figures in the margin indicate full marks.

[The answers should be concise. Special attention will be paid to neatness and tidiness. Sketches should be drawn in pencil; the use of a straight edge and a pair of compasses is recommended.]

1. Describe generally the various methods of finding the specific heat of a solid or a liquid. 6

Discuss the relation between the specific heats and the atomic weights of bodies. 6

2. Describe the chemical hygrometer, and obtain the necessary formula for determining the pressure of the aqueous vapour in the atmosphere. 7

3. What is an isothermal? Draw the isothermals for an imaginary substance which exists as a liquid and a vapour at ordinary pressures and temperatures. 8

What conclusions can you deduce from the diagram? Discuss them fully.

4. Define emissivity and absorptive power; show by a general process of reasoning that for any definite wave-length, and for any one temperature, they are equal to one another. 7

5. What is meant by a reversible heat engine? Show that all reversible heat engines possess the same efficiency when absorbing and rejecting heat at the same two temperatures. 7

6. Show how Boyle's law may be deduced from the Kinetic theory of gases. 7

7. Find the electric force at any external point due to a surface distribution of density ρ over an infinite plane. 6

Describe the attracted-disk electrometer, and show that the difference of potential between the disks is proportional to the distance between them. 6

8. Show that the potential due to a magnetic shell at an external point is iw , where i is the strength of the shell, and w is the solid angle subtended by the shell at the point. Hence show that the potential of a magnetic pole on a shell is iN , where N is the number of lines of force due to the pole which pass through the shell. 9

9. Explain carefully the construction and theory of the induction coil. How does the condenser which is associated with the primary circuit assist the action of the coil? 6

10. Describe the arrangement known as Wheatstone's bridge, and find the relation between the various resistances, when there is no current through the galvanometer. 6

What is the modification of Wheatstone's bridge known as the metre bridge? How was it used by Carey Foster for measuring the small differences between standard coils? 7

11. Explain the theory of the simple continuous current dynamo with two poles. What is meant by the electric efficiency of the dynamo? 8

If the number of magnetic lines sent through the armature by the field magnet be 8,260,000, and the number of wires in series on the armature be 150, find the total voltage when the armature is making 900 revolutions per minute. 4

PHYSICS AND CHEMISTRY.

THIRD HONOUR PAPER.

CHEMISTRY.

Examiner—E. R. WATSON, ESQ., M.A., B.Sc.

The figures in the margin indicate full marks.

1. What is the relation between the specific heat of an element in the solid state and its atomic weight? How has it been utilized in the determination of the atomic weight of indium? 13

0.1242 grammes of metal yield 0.1818 grammes of sulphate; and the specific heat of the metal is 0.031. Calculate the atomic weight of the metal.

2. State what you know of the phenomenon of dissociation in the cases of nitrogen peroxide and calcium carbonate, noting especially the influence of temperature and pressure. 14

The density of nitrogen peroxide gas at 60°C. is 30.1 (H=1). Calculate the percentage of NO₂ molecules in the gas.

3. What are the factors which determine the solubility of a solid substance in a liquid; and what are the phenomena which are generally observed in the process of solution? 13

4. Describe fully, giving a sketch of the apparatus, the cryoscopic method (Raoult's) of determining the molecular weight of a non-volatile solid substance. 14

5. Describe fully the preparation and properties of nickel carbonyl, and state how the compound is used in the preparation of pure metallic nickel. 13

6. What is white lead? Describe the Dutch method of manufacturing the substance; give equations. What are the properties of white lead? 13

7. Give the preparation and properties of (a) boron nitride, (b) calcium carbide, (c) phosphorus pentasulphide. State their reactions with water. 12
8. How would you obtain (a) free carbon from carbon dioxide, (b) free sulphur from sulphuretted hydrogen, (c) iodine from iodic acid, and (d) ammonia from a nitrate? 8

PHYSICS AND CHEMISTRY.

HALF FOURTH HONOUR PAPER. (a)

CHEMISTRY.

Examiner—DR. W. A. K. CHRISTIE, PH.D.

The figures in the margin indicate full marks.

One-and-a-half hours only will be allowed for this paper.

1. Describe Dumas' method of estimating nitrogen in organic substances. 13

An organic substance containing carbon, hydrogen, nitrogen, and oxygen only, contains in 100 parts by weight

C, 63.49 parts;

H, 5.82 parts;

N, 22.22 parts.

Calculate the simplest molecular formula of the compound.

2. Describe the preparation of acetic aldehyde, giving practical details and making a sketch of the apparatus employed. State the properties of the compound, and give reasons why its constitutional formula is written as $\text{CH}_3\text{CO.H}$. 12

3. Describe the preparation of yellow prussiate of potash on a manufacturing scale. How is potassium cyanide obtained from it? State the reactions of yellow prussiate of potash with the following:—(a) concentrated sulphuric acid; (b) ferric chloride; (c) ferrous sulphate; (d) cupric sulphate. Give equations. 13

4. Give the characteristic physical and chemical properties of the following substances:—(a) acetamide; (b) monochloroacetic acid; (c) ethyl acetate; (d) lactic acid (ordinary); (e) dextro-tartaric acid; (f) glycerol. 12

PHYSICS AND CHEMISTRY.

HALF FOURTH HONOUR PAPER. (b)

PRACTICAL CHEMISTRY.

Examiners— $\left\{ \begin{array}{l} \text{E. R. WATSON, ESQ., M.A., B.Sc.} \\ \text{DR. W. A. K. CHRISTIE, PH.D.} \end{array} \right.$

The figures in the margin indicate full marks.

You are given two substances. Enter the numbers in your book. 50
Make a qualitative analysis of each substance, and write out a concise account of your examination of each.

(Each substance may contain not more than two basic radicles and two acid radicles.)

BIOLOGY.

FIRST PASS PAPER.

PHYSIOLOGY.

Examiners— $\left\{ \begin{array}{l} \text{CAPT. D. MCCAY, M.D., M.CH., B.A.O.} \\ \text{R.U.I., I.M.S.} \\ \text{DR. UPENDRA NATH BRAHMACHARI, M.A.} \\ \text{M.D.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Describe the character, the composition, the mode of formation, and the functions of lymph. 16
2. Trace closely the oxygen of the inspired air in its passage through the body. Describe the nervous mechanism of respiration. 16
3. Mention the constituents of urine. How is it secreted? 18
4. Give a careful account of the functions of the pancreas. 16
5. State all you know regarding the functions of the cerebellum. 16
6. Give a short account of the— 18
 - (a) Optical defects of the normal eye;
 - (b) Abnormalities in the refraction of the eye.

BIOLOGY.

SECOND PASS PAPER.

BOTANY.

Examiners—{ I. H. BURKILL, ESQ., M.A., F.L.S.
A. HOWARD, ESQ., M.A., F.L.S.

The figures in the margin indicate full marks.

1. Describe the chief forms of underground stems, and state the purposes that they serve. 20
2. Describe how a Dicotyledonous root increases in thickness. 20
3. How do plants take up water, and how do they lose it ? 20
4. Describe the Natural Order *Solanaceae*. Name four plants of the order with marked morphological differences in their fruits. 20
5. Give the life-history of either of the Algae, *Ulothrix* or *Vaucheria*. 20

GEOLOGY.

Paper-Setters—{ T. H. HOLLAND, ESQ., F.R.S., F.G.S.,
A.R.C.S.
P. N. DATTA, ESQ., F.G.S.

FIRST PASS PAPER.

Examiner—T. H. HOLLAND, ESQ., F.R.S., F.G.S., A.R.C.S.

All the questions are of equal value.

Only EIGHT questions are to be attempted.

1. Describe the process of weathering, indicating the agents concerned therein and the main effects resulting therefrom.
2. Give a short account of the rocks of the Carboniferous period of England, with a statement of the fauna and flora that flourished at the time.
3. Describe, with illustrative sketches, the structure of a volcano. How would you distinguish a surface lava-flow from an intrusive mass of igneous rock ?
4. Name the principal subdivisions of the Cretaceous rocks in Europe as well as in India.
5. Explain the following terms:—False-bedded, Laminated, Devitrified, Spherulitic, Amygdaloidal, Strike.
6. Describe the formation of (a) Coal, (b) Conglomerate, (c) Limestone, and (d) Shale.
7. Explain fully what you understand by (a) Overlap and (b) Unconformability. State if there is, or there is not, any necessary connexion between the two, giving reasons for your answer.

8. Give a list showing the general sequence of the Gondwana rocks of India, with a short account of the flora of the period and of the physical conditions under which the beds were deposited.

9. Describe the different ways in which an organism may be preserved as a fossil. Of what value are fossils in Geology?

10. State what you know about Metamorphism.

GEOLOGY.

SECOND PASS PAPER.

MINERALOGY.

Examiner—T. H. HOLLAND, ESQ., 'F.R.S.', F.G.S., A.R.C.S.

[The value of each question is the same. EIGHT questions only should be attempted.]

1. Give an account of the principal kinds of pseudomorphism, naming examples in each case.

2. Describe the following minerals :—graphite, anorthite, pyrolusite, cerussite.

3. Describe the holohedral forms of the cubic system.

4. What is meant by twinning? Define the terms *twin-plane*, *twin-axis*.

5. Describe the optical properties of calcite and quartz.

6. What are the zeolites? Where do they occur and how are they formed?

7. Describe the garnet group.

8. Draw and describe a combination of rhombohedron and hexagonal prism.

9. Give a full account of the felspar group.

10. Describe two methods for determining the specific gravity of minerals.

GEOLOGY.

FIRST HONOUR PAPER.

Examiner—T. H. HOLLAND, ESQ., F.R.S., F.G.S., A.R.C.S.

You are permitted to attempt EIGHT questions only. The value of each question is the same.

1. Name the chief varieties of rocks characterised by containing some mineral of the feldspathoid group.

2. Describe the chief kinds of faults, illustrating your answer by diagrams.

3. Give an account of the stratigraphy and palæontology of the Siwalik system.

4. Compare the Mesozoic fauna with that of the Palæozoic era.
5. Describe the principal results of contact metamorphism.
6. Give an account of the Carboniferous system of Great Britain.
7. Describe the action of wind as a geological agent.
8. Give a full account of the mode of occurrence and usual associates of rock-salt.
9. Describe the Cretaceous rocks of South India.
10. Give an account of the rocks generally grouped as Archæan.

GEOLOGY.

SECOND HONOUR PAPER.

MINERALOGY AND PHYSICAL GEOGRAPHY.

Examiner—T. H. HOLLAND, ESQ., F.R.S., F.G.S., A.R.C.S.

All the questions are of equal value. Only FOUR questions are to be attempted from EACH group.

GROUP I.

1. Indicate the main differences in the optical characters of minerals crystallizing in the (a) cubic, (b) hexagonal, and (c) monoclinic system.
2. Briefly describe the Felspars, indicating how the different species may be distinguished.
3. State what you know about the following minerals :—Tourmaline, Olivine, Augite, Biotite, Nepheline, Epidote.
4. Describe the principal ores containing manganese.
5. Explain what you understand by (a) Isomorphism and (b) Pseudomorphism, giving instances illustrative of your answer.

GROUP II.

1. What are Monsoons ? Describe the Indian Monsoons, and indicate the proximate causes of their origin.
2. Give a section from E. to W. of the Atlantic basin. Classify the various deposits formed on the bed of an ocean, showing the relation, if any, between the nature of the deposit and the depth of the ocean bed.
3. What are springs, and how do they originate ? Show by illustrative sketches what arrangement of strata would be the best for a constant supply of water.
4. What is a glacier ? Describe its origin and functions, and state how the presence of glaciers in the past history of a country may be detected.
5. How is rain formed ? What are the agencies concerned in the distribution of rainfall over a country ? Taking India for instance, briefly explain the broad differences in rainfall in the different parts of the country.

GEOLOGY.

THIRD HONOUR PAPER.

Examiner—T. H. HOLLAND, F.R.S., F.G.S., A.R.C.S.

You are permitted to attempt FOUR questions only. The value of each question is the same.

1. Discuss the evidences that have been considered in estimating the geological age of the lower and upper limits of the Gondwana system.
2. Why is there a marked difference between the faunas of two series of beds separated by a strong physical unconformity?
3. Describe the chief phenomena in sedimentary rocks which indicate sea-shore conditions at the time of their formation
4. What evidences would you search for in order to determine the relations of a sheet of basalt to the sediments above and below it?
5. What is there to show that during recent geological times the relative levels of land and sea have changed locally?

GEOLOGY.

FOURTH HONOUR PAPER.

PALAEONTOLOGY AND DOCTRINE OF SCIENTIFIC METHOD.

Examiner—T. H. HOLLAND, ESQ., F.R.S., F.G.S., A.R.C.S.

All the questions are of equal value. Only EIGHT questions are to be attempted.

1. Describe the structure of (a) a Trilobite and (b) a Graptolite, and indicate their range in time.
2. How would you distinguish a brachiopod shell from that of a lamelli-branch? State the distribution in time of the brachiopoda and the lamellibranchiata.
3. Of what beds are the following fossils characteristic :—*Phillipsia derbiensis*, *Perna Mulleti*, *Calymene Blumenbachii*, *Halobia* (*Daonella*) *Lommeli*, *Rhamphorhynchus phyllurus*, *Estheria minuta*, *Neuropteris heterophylla*, *Terebratula hastata*, *Pterichthys testudinarius*, *Atrypa reticularis*, *Voluta Lamberti*, *Cerithium giganteum*?
4. Distinguish between the Genera (a) *Nautilus*, (b) *Goniatites*, and (c) *Belemnites*, and indicate the range in time of the families to which they respectively belong.
5. Describe the structure of a coral. Classify the Actinozoa, giving the distinctive characters of the three principal groups into which they may be placed, and naming a few of the principal genera under each group.
6. Give a brief account of the fauna and flora of the Carboniferous period.
7. Distinguish between the Amphibia and the Reptilia, and name the first representative of each class in the geological record, with the horizon in which it appears.

8. Contrast the flora of the Mesozoic period with that of the Tertiary times.

9. What is the 'Age of Reptiles'? Give a short account of the principal reptilian forms that flourished during the period.

10. Briefly describe the flora and fauna of the Cretaceous period.

MATHEMATICS.

Paper-Setters— $\left\{ \begin{array}{l} \text{G. W. KÜCHLER, Esq., M.A.} \\ \text{J. A. CUNNINGHAM, Esq., B.A., A.R.C.Sc.I.} \\ \text{C. W. PEAKE, Esq., M.A.} \end{array} \right.$

FIRST PASS PAPER.

Examiners— $\left\{ \begin{array}{l} \text{DR. C. E. CULLIS, M.A., Ph.D.} \\ \text{F. TURNER, Esq., B.A.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Prove that if a rigid body which is free to turn about a fixed axis be acted upon by a number of forces in a plane perpendicular to the axis, it will be in equilibrium provided that the sum of the moments of the forces about the point where the axis meets their plane vanishes. 10

2. A beam, whose centre of gravity divides it into portions of lengths a and b respectively, rests in equilibrium with its ends resting on two smooth planes inclined at angles α and β respectively to the horizon, the planes intersecting in a horizontal line; find the inclination of the beam to the horizon, and the pressure on the planes. 10

3. Show that the centre of gravity of a triangle coincides with that of three equal particles placed at its angular points. 10

$ABCD$ is a quadrilateral: AC and BD intersect in E : points F and G are taken on AC and BD such that AF and BG are equal to EC and ED respectively: prove that the centres of gravity of the triangles FBD and GAC coincide.

4. An object weighs 12.252 grammes in one scale and 12.200 in the other scale of an uneven balance. Determine the true weight, and the ratio of the arms; and justify your determination. 10

5. Find the relation between the power and the weight in the case of a screw, when friction is taken into account. 10

6. Define the centre of pressure of a surface immersed in a heavy liquid; and find its position in the case of an immersed triangle with one edge in the surface of the liquid. 10

7. A cylindrical beaker 6 inches high is filled with water at 0°C . up to 4 inches from the bottom. Determine the height of a cylinder of ice of the same diameter which will just float in it without spilling, and such that the beaker will be full when all the ice is melted. The density of ice at 0°C . relative to water at 0° may be taken as $\frac{1}{9}$. 10

8. Define the metacentre of a floating body, and show how to find its position. 10

9. Describe carefully the construction of a Bramah hydraulic press. 10

10. Explain exactly how a barometer may be used to determine altitudes above sea-level. 10

MATHEMATICS.

SECOND PASS PAPER.

Examiners { G. W. KÜCHLER, ESQ., M.A.
BABU BIPINBIHARI GUPTA, M.A.

The figures in the margin indicate full marks.

1. Enunciate and prove the parallelogram of velocities. 6
A body has a velocity of 60 feet per second towards the north, and a velocity of 6 feet per second is given to it in each of 10 seconds towards the north-east; find the magnitude and direction of its velocity at the end of 10 seconds. 6
2. Define force, and explain how it is measured 3
Find the tension of a rope which draws a carriage weighing 10 tons up an incline of 1 in 9, so as to produce an increase of velocity of 5 feet per second. 7
3. What do you mean by the horse-power of an engine? 2
Find the horse-power of a locomotive, which moves a train weighing 50 tons at the rate of 30 miles per hour on a road, where the resistances amount to one-seventieth of the weight. 9
4. Find the time of vibration of a simple pendulum, in terms of the length of the string and the acceleration due to gravity. 9
A stone of one pound weight is attached to a string $4\frac{1}{2}$ feet long having one end fixed, and is whirled round horizontally. Find the time of revolution when the tension of the string is 9lb. 8
5. A body is projected with a velocity of 20 feet per second from the surface of a horizontal plane in a direction making an angle of 45° with the horizon. Find its range on the horizontal plane, the greatest height it will attain, and its velocity at its highest point. 10
6. Describe a transit instrument, and show the errors to which it is liable. 10
7. Explain the phenomenon of twilight, and show that twilight will last all night provided that the latitude of the place plus the declination of the sun is not less than 72° . 6
8. Explain fully why the average amount of heat received daily from the sun by a place on the earth is greater in summer than in winter. 8
9. Prove that aberration varies as the sine of the earth's way. 8
10. Explain the effect of refraction on the apparent position of the heavenly bodies, and show that it varies as the tangent of the apparent zenith distance. 8

MATHEMATICS.

FIRST HONOUR PAPER.

Examiner—DR. C. E. CULLIS, M.A., PH.D.

The figures in the margin indicate full marks.

1. Prove that if three forces maintain a body in equilibrium their lines of action must either be all parallel or meet in a point. 13

A rod whose centre of gravity divides it into two portions, whose lengths are a and b , has a string of length l tied to its two ends, and the string is slung over a small smooth peg; find the position of equilibrium of the rod.

2. Three equal smooth rods, each of weight W , are freely jointed at their extremities so as to form an equilateral triangle which is placed on a smooth right circular cone of semi-vertical angle α , whose axis is vertical and vertex upwards. Show that the triangle will rest in a

horizontal plane, and that the reaction at each joint is $\frac{W \cot \alpha}{\sqrt{3}}$.

3. Find the centre of gravity of a uniform circular arc. 11

4. N pulleys of various weights are arranged according to what is known as the 'First System' (i.e., each string, except the last which carries the weight, is attached to the supporting beam). Obtain a general expression for the relation between power and weight; and find the total pressure on the supporting beam. 8

5. A uniform solid rectangular block leans against a vertical wall with one edge resting on a rough horizontal plane. If θ is the angle which the plane containing the two supporting edges makes with the vertical, $2a$ the distance between these edges, and $2b$ the thickness of the block perpendicular to their plane, and if the friction is limiting at the lower edge only, find the ratio of the friction to the normal pressure at the upper edge. 12

6. Prove that for any fluid at rest, the pressure must be the same in all directions. 9

7. Define the metacentre of a ship, and investigate a formula for its position. 10

At what level must a weight be placed amidships, so that it may neither increase nor diminish the stability?

8. Prove that, on the hypothesis of a uniform temperature, the height of the barometer decreases in geometrical progression as the altitude above sea-level increases in arithmetical progression. 13

Calculate at what depth in a mine the pressure would be two atmospheres, having given that a cubic decimetre of air at 0°C . and at atmospheric pressure (760 mm. of mercury of density 13.59) weighs 1.293 grammes.

9. A hydrometer has a cylindrical stem divided into equal parts. 11
When the instrument is immersed in two liquids of known densities d_1, d_2 , the readings at the surface are n_1, n_2 . What is the density of a third liquid in which the reading is n_3 ?

MATHEMATICS.

SECOND HONOUR PAPER.

Examiner—G. W. KÜCHLER, Esq., M.A.

The figures in the margin indicate full marks.

1. Find the line of quickest descent from a given point to a given circle in the same vertical plane. 3

Hence find the line of quickest descent from a straight line to a 8

circle in the same vertical plane, and show that this line is perpendicular to the line of quickest descent from the circle to the straight line.

2. Give Newton's three laws of motion, and deduce from the second the measure of a force. 4

If a yard, a minute, and a hundredweight be taken as the units of length, time, and mass respectively, express the corresponding unit of force in poundals. 6

3. Find the range of a projectile on a horizontal plane, and for a given velocity of projection determine the angle of projection for which the range is a maximum. 4

A gun is fired from a moving platform; when the platform is moving forward, the range is a , and when it is moving backwards the range is b . If the velocity of the platform is u , find the elevation of the gun, and the muzzle velocity. 7

4. If two elastic spheres impinge obliquely with given velocities, find the velocities after impact. 5

If the spheres are perfectly elastic, show that the line of centres bisects the angle between the directions of the relative velocities before and after impact. 7

5. A particle slides from rest at the highest point down the outside of the arc of a smooth vertical circle; find when it leaves the curve. 4

A particle slides down a smooth curve through a vertical height h , and thus acquires sufficient velocity to run completely round the inside of a vertical circular loop of radius r : prove that $2h$ must be greater than $5r$. 7

6. Define work, kinetic and potential energy, power. 4

What horse-power must a locomotive develop in order to get up a velocity of 20 miles an hour on an incline of 1 in 32 in a train of 50 tons in 10 minutes after starting, the resistance of the rails being taken as 10 pounds per ton? 7

7. A railway carriage is travelling on a curve of radius r with a velocity v ; if h be the height of the centre of inertia of the carriage above the rails (which are at the same level), and $2a$ be the distance between them, show that the carriage will upset if

$$v > \sqrt{\frac{gra}{h}}$$

8. Describe Foucault's experiments for demonstrating the rotation of the earth, and explain generally the theory on which they are based. 6

9. Enunciate and explain Kepler's laws, and deduce the third law from the law of gravitation on the assumption that the orbits of the planets are circular. 6

10. Explain Halley's and Delisle's method of finding the parallax of the sun. 7

11. Explain with the help of a diagram the nature of a lunar eclipse, and show that a lunar eclipse cannot occur if the distance between the centres of the moon and of the earth's shadow exceeds $56'$. 7

MATHEMATICS.

THIRD HONOUR PAPER.

*Examiner—F. TURNER, ESQ., B.A.**The figures in the margin indicate full marks.*

1. Find the equation of the straight line which passes through the point (a, b) and through the point of intersection of the lines

$$\frac{x}{a} + \frac{y}{b} = 1 \text{ and } \frac{x}{b} + \frac{y}{a} = 1.$$

2. Find the equation of the straight lines bisecting the angle between the two straight lines given by the equation

$$ax^2 + 2hxy + by^2 = 0.$$

- If the pairs of straight lines denoted by the equations $x^2 - 2axy - y^2 = 0$, and $x^2 - 2bxy - y^2 = 0$ be such that each pair bisects the angles between the other pair, prove that

$$ab = -1.$$

3. If $S = 0$ represents the equation of a circle, and $L = 0$ the equation of a straight line, what does $S + kL = 0$ represent, k being a variable parameter?

Show, after simplifying the equations by a suitable choice of axes, that two points can always be found, for each of which the polars with regard to the above curves are the same.

When are these two points imaginary?

4. Find the length of the intercept made on the straight line $y = mx$ by the circle $x^2 + y^2 + 2gx + c = 0$, and hence find the condition that the straight line shall touch the circle.

5. Show that the co-ordinates of any point on the parabola $y^2 = 4ax$ can be expressed in the form $x = am^2$, $y = 2am$, and find the equations of the tangent and normal at the point m .

If the angles θ_1 and θ_2 which the tangents to a parabola from a point P make with the axis are connected by the relation $\tan^2 \theta_1 + \tan^2 \theta_2 = k$, find the locus of P .

6. Find the angle subtended at the focus by the tangent drawn to a central conic from any point, and hence show that the angle subtended at the focus by any chord is bisected by the line joining the focus to its pole.

7. Define conjugate diameters. Show that in the ellipse conjugate diameters lie on different sides of the axis minor and that in the hyperbola conjugate diameters lie on the same side of the conjugate axis.

Show also that in a hyperbola each asymptote is its own conjugate.

8. Indicate briefly the process you would adopt to determine the length of the axes of a conic represented by the general equation of the second degree.

Trace the curves:

$$(1). \quad 3x^2 + 2xy + 3y^2 + 8x + 8y = 0;$$

$$(2). \quad 9x^2 + 24xy + 16y^2 - 4y - x + 7 = 0.$$

9. Find the polar equation of a conic, the focus being the pole.

Prove that the locus of middle points of focal chords of a parabola is another parabola with its vertex at the focus of the first.

MATHEMATICS.

FOURTH HONOUR PAPER.

Examiner—BABU BIPINBEHARI GUPTA, M.A.

The figures in the margin indicate full marks.

1. Define a differential coefficient. Give a geometrical interpretation of $\frac{dy}{dx}$. 10

Differentiate e^x , x^{e^x} , $\log \left(\frac{1 - \cos x}{1 + \cos x} \right)$.

2. If y is the product of two functions; find Leibnitz's expression for the n^{th} derivative of y . 10

If $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$, show that

$$(abc + 2fgh - af^2 - bg^2 - ch^2) \frac{d^2y}{dx^2} = (hs + by + f)^2.$$

3. Show that $f(x)$ will have a maximum or minimum value when $x = a$, if $f'(a) = 0$. 10

Two focal chords are drawn in an ellipse at right angles; find when their sum is a maximum and when a minimum.

4. Find the limiting values of 10

(1) $x^m (\log x)^n$ when $x = 0$;

(2) $\left(\frac{1}{x} \right)^{\sin x}$ when $x = 0$;

(3) $\left(\frac{a_1^{\frac{1}{x}} + a_2^{\frac{1}{x}} + \dots + a_n^{\frac{1}{x}}}{n} \right)^{nx}$ when $x = \infty$.

5. Taking curvature as the rate of change of direction of a curve, show that the curvature of a plane curve in 10

rectangular co-ordinates is equal to $\frac{\frac{d^2y}{dx^2}}{\left\{ 1 + \left(\frac{dy}{dx} \right)^2 \right\}^{\frac{3}{2}}}$.

Show that the radius of curvature of a cycloid is twice the normal.

6. Integrate the following functions: 10

$$\frac{1}{x^2 - a^2}, \frac{1}{\sqrt{1 + x^2}} \sin x \sin 2x \sin 3x, \frac{1}{\sin x}, \frac{1}{a + b \cos x}.$$

7. Explain what is meant by integration by parts. 10
Integrate by parts

$$e^{ax} \cos (bx + c), e^{-x} \sin^2 x, \sqrt{2ax - x^2}.$$

8. Show by an example what is meant by a formula of reduction. 10

Find the value of $\int_0^{\frac{\pi}{2}} \sin^3 \theta \cos^4 \theta d\theta$.

9. Trace the curve $y^2(a-x) = x^2(a+x)$, and find (1) the area of the loop, (2) the area between the curve and the asymptote.

10. Trace the curve $r = a(1 + 2 \cos \theta)$, and find the area included by the curve, as well as that of the inner loop.

LATIN.

Paper-Setters—{ REV. J. EDWARDS, M.A.
M. GHOSE, ESQ., B.A.

FIRST PASS PAPER.

Examiner—HARINATH DE, ESQ., M.A. (*Cal. and Cantab.*).

The figures in the margin indicate full marks.

1. Translate into English :—

- | | | |
|-----|--|---|
| (a) | Mox et frumentis labor additus, ut mala culmos Esset robigo, segnisque horreret in aruis Carduus: intereunt segetes, subit aspera silua, Lappasque tribolique, interque nitentia culta Infelix lolium et steriles dominantur avenae. | 4 |
| (b) | Sed tamen et quernas glandes tum stringere tempus Et lauri bacas oleamque cruentaue myrta; Tum gruibus pedicas et retia ponere ceruis, Auritosque sequi lepores; tum figere dammas Stuppea torquentem Balearis uerbera fundae, Cum nix alta iacet, glaciem cum flumina trudunt. | 4 |
| (c) | Sin ortu quarto—namque is certissimus auctor— Pura neque obtunsis per caelum cornibus ibit, Totus et ille dies et qui nascentur ab illo Exactum ad mensem pluuiis uentisque carebunt. | 4 |
| (d) | Nam ieiuna quidem cliuosi glareas raris Uix humilis apibus casias roremque ministrat; Et tofus scaber et nigris exesa chelydri Creta negant alios aequae serpentibus agros Duclem ferre cibum et curuas praebere latebras. | 4 |
| (e) | Nec non etiam aspera rusci Uimina per siluam et ripis fluuiialis harundo Caeditur, incultique exercet cura salicti. Iam uinctae uites, iam falcem arbusta reponunt, Iam canit effectos extremus uinitor antes. | 4 |
| (f) | Tu spisso uimine qualos Colaue prelorum fumosis deripe tectis; Huc ager ille malus dulcesque a fontibus undae Ad plenum calcantur; aqua eluctabitur omnis Scilicet et grandes ibunt per uimina guttae. | 4 |
| (g) | Illic iniussae ueniunt ad mulctra capellae, Refertque tenta grex amicus ubera; Nec uespertinus circumgemit ursus ouile, Neque intumescit alta uiperis humus. | 4 |

- (h) Quodsi meis inæstuet præcordiis 4
 Libera bilis, ut hæc ingrata uontis diuidat
 Fomenta uolnus nil malum leuantia,
 Desinet imparibus certare summotus pudor.
- (i) Neque hic lupis mos nec fuit leonibus, 4
 Numquam nisi in dispar feris :
 Furorne cæcus an rapit uis acrior
 An culpa ? responsum date !
 Tacent, et ora pallor alius inficit,
 Mentisque percussio stupent.
- (k) Diris agam uos ; dira detestatio 4
 Nulla expiatur uictima.
 Quin, ubi porire iussus exspirauero
 Nocturnus occurram Furor,
 Petamquo uoltus umbra curuis unguibus,
 Quao uis deorum est manium.
- (l) Has inter opulas ut iuuat pastas oves 4
 Uidere properantes domum,
 Uidere fessos uomerem inuersum boues
 Collo trahentes languido,
 Positosque uernas, ditis examen domus,
 Circum renidentes lares.
- (m) Romanus eheu ! (posteri negabitis) 4
 Emancipatus feminae
 Fert uallum et arma miles et spadonibus
 Seruire rugosis potest,
 Interque singa turpe militaria
 Sol aspiciet conopium.

2. (a) Write a brief life of Horace, giving the dates of the most important events which occurred during his lifetime. 5

(b) Describe briefly, adding the Latin terms, the chief ways in which trees are said in the *Georgics* to be propagated. 5

3. Translate into Latin prose :— 18

What country can vie with Italy ? No monstrous creatures have ever devastated its fields, but plenty has always filled the land. The war-horse and herds of beautiful cattle find here their home, where spring and summer linger long, and fruitfulness abounds. No savage beasts, no deadly drugs nor huge serpents here molest men. Think, too, of its ancient cities high-perched on rugged crags, overlooking the streams that glide below ; think of its seas and lakes and harbours, and of its wealth in gold, silver, and copper. This is the land that has reared a hardy race of men, and produced heroes like the Decii, the Scipios, and thee, O mighty Caesar, victorious in the East. Hail, O Saturnian land ! in thy honour I send forth the verses I have written in imitation of Hesiod.

4. Translate into English :—

- (a) Non est (falleris) hæc boata, non est, 12
 Quod uos creditis esse, uita, non est,
 Fulgentes manibus uidere gemmas,
 Aut testudineo iacera lecto,
 Aut pluma latus abdidiisse molli,
 Aut auro bibere et cubare coco ;
 Regales dapibus grauare mensas,
 Et quidquid Libyæ secatur aruo,
 Non una positum tenere cella,
 Sed nullos trepidum timere casus,
 Nec uano populi fauore tangi,

- Et stricto nihil aestuare ferro,
 Hoc quisquis poterit, licebit illi
 Fortunam moueat loco superbus.
- (b) Mobilis aestiuas platanus diffuderat umbras 12
 Et bacis redimita daphne, tremulaeque cupressus,
 Et circumtonsae tropidanti uertice pinus.
 Has inter ludebat, aquis errantibus, ætnis
 Spumeus, et querulo uersabat rore lapillos.
 Dignus amore locus, testis siluestris Aedon
 Atque urbana Procne : quæ circum gramina fusae,
 Et molles uiglas, cantu sua rura colebant.

LATIN.

SECOND PASS PAPER.

Examiner—REV. R. F. PEARCE, M.A.

The figures in the margin indicate full marks.

1. Translate the following, and explain the construction of the words in italics :—

(a) Spurius Tarpeius Romanæ praeerat arci. Huius filiam 12
 virginem auro corrumpit Tatiùs, ut armatos in arcem accipiat : aquam
 forte ea tum *sacris* extra moenia *petitum* ierat. Accepti obrutam armis
 necavere, seu ut vi capta potius arx uideretur, seu *prodendi* exempli
 causa, ne quid usquam fidum proditori esset. Additur fabula, quod
 vulgo Sabini aureas armillas magni ponderis brachio laevo gem-
 matosque magna specie anulos habuerint, popigisse eam, quod in
 sinistris manibus *haberent* : eo scuta illi pro aureis donis congesta.
 Sunt qui eam ex pacto tradendi, quod in sinistris manibus esset, de
 recto arma petisse dicant, et fraude visam agere sua ipsam peremptam
 mercede.

(b) Intentus perficiendo templo fabris undique ex Etruria accitis 10
 non pecunia solum ad id publica est usus, sed operis etiam ex plebe.
 Qui cum haud parvus et ipse militiae adderetur labor, minus tamen
 plebs gravabatur se templa deum exaedificare manibus suis, quam
 postquam et ad alia ut specie minora sic *laboris* aliquanto maioris
 traduccebantur opera, foros in circo faciendos cloacamque maximam,
 receptaculum omnium purgamentorum urbis, sub terra agendam ;
 quibus duobus operibus vix nova haec magnificentia quicquam adae-
 quare potuit. His laboribus exercita plebe, quia et urbi multitudinem,
 ubi usus non *esset*, oneri rebatur esse, et colonis mittendis occupari
 latius imperii fines volebat, Signiam Circeiosque colonos misit, praesi-
 dia urbi futura terra marique.

Describe briefly the buildings and places referred to in the above 2
 extract.

(c) Quid ? aviam tuam, Oppianice, Dinaciam, cui tu es heros, 12
 pater tuus non manifesto necavit ? Ad quam cum adduxisset modi-
 cum illum suum, iam cognitum et saepe victorem, per quem inter-
 fecerat plurimos, mulier exclamat se ab eo nullo modo curari velle, quo
 curante omnes suos perdidisset. Tum repente Anconitanum quen-
 dam, L. Clodium, pharmacopolam circumforaneum, qui casu tum

Larinum *venisset*, adgreditur et cum eo duobus milibus HS, id quod ipsius tabulis tum est demonstratum, transigit. L. Clodius, qui *properaret*, cui multa fora restarent, simul atque introductus est rem confecit; prima portione mulierem sustulit, neque postea Larini punctum est temporis commoratus. Eadem hac Dinaea testamentum faciente, cum tabulas prehēdisset Oppianicus, qui gener eius *fuisset*, digito legata delevit: et cum id multis locis fecisset, post mortem eius, ne lituris coargui posset, testamentum in alias tabulas transcriptum signis adulterinis obsignavit.

(d) Non enim mihi exemplum summi et clarissimi viri, P. Africani, praetereundum videtur, qui cum esset censor et in equitum censu C. Licinius Sacerdos prodisset, clara voce, ut omnis contio audire posset, dixit se scire illum verbis conceptis perierasse: si qui contra vellet dicere, usurum esse eum suo testimonio: deinde cum nemo contra diceret, iussit equum traducere. Ita is, cuius arbitrio et populus Romanus et exteræ gentes contentæ esse consueverant, ipse sua scientia ad ignominiam alterius contentus non fuit. Quod si hoc *Habito* facere licuisset, facile illis ipsis iudiciis et falsæ suspicioni et invidiæ populariter excitatæ restitisset.

Explain the custom referred to in this passage.

2. Explain the following terms:—

(a) *Spolia opima*, *pater patratus*, *interregnum*, *menses intercalarii*, *pomerium*, *provocatio*.

(b) *Sequester*, *triumvir*, *prævaricor*, *subsortitio*, *subscriptio*, *referre in aerarios*.

3. Parse the following words:—*defexit*, *ausim*, *adclarassis*, *dedier*, *interleverat*, *rettulerunt*.

Explain the construction of the italicised words in the following passage:—

Nihil in vita vidit *calamitatis* A. Cluentius, nullum periculum *mortis* adiit, nihil mali timuit, quod non totum a matre *esset* conflatum et profectum. Quæ hoc tempore *sileret omnia*, atque ea, si oblivione non *posset*, tamen taciturnitate sua tecta esse pateretur: sed vero sic agitur ut prorsus *reticere* nullo modo *possit*.

4. Translate into Latin:—

- (a) (i) He founded the city without any religious ceremony.
- (ii) He gave his daughter in marriage to Mamilius.
- (iii) They supposed that it was all up with Servius.
- (iv) It is enclosed between two groves as you go down the hill.
- (v) On that day no public business can be carried on.
- (vi) He said he had come to demand satisfaction.

(b) Caesar indeed foresaw that, as on the previous days, the enemy, if routed, would escape danger by rapid flight: yet having obtained 30 horse, which had been brought over by Commius the Atrebatian (mentioned above), he drew up his army in line in front of the camp. In the battle which followed, the enemy were unable to withstand the attack of our forces, and turned to flight. Our troops pursued them as far as their speed and strength permitted, and killed many of them: then, after burning and destroying all they could in every direction, they retired to the camp.

5. Translate into English:—

Quæres a nobis, Gratti, cur tantopere hoc homine delectemur? quia suppeditat nobis, ubi et animus ex hoc forensi strepitu reficiatur, et aures convicio defessæ conquiescant. An tu existimas, aut suppetere nobis posse, quod quotidie dicamus in tanta varietate rerum nisi animos nostros doctrina excolamus; aut ferre animos tantam posse contentionem, nisi eos doctrina eadem relaxemus? Ego

vero fateor, me his studiis esse deditum : ceteros pudeat, si qui ita se litoris abdiderunt, ut nihil possint ex his neque ad communem afferre fructum, neque in adspectum lucemque proferre. Me autem quid pudeat, qui tot annos ita vivo, iudices, ut ab nullius unquam me tempore aut commodum aut otium meum abstraxerit, aut voluptas avocarit, aut denique somnus retardarit ?

LATIN.

FIRST HONOUR PAPER.

Examiner—HARINATH DE, ESQ., M.A. (*Cal. and Cantab.*).

The figures in the margin indicate full marks.

1. Translate the following passages into English, adding notes where necessary, to explain the subject-matter :—

- (a) Ergo age, terrae
pingue solum primis extemplo a mensibus anni
fortes inuvertant tauri glaebasque iacentes
puluerulonta coquat maturis solibus aestas ;
at si non fuerit tellus fecunda, sub ipsum
Arcturam tenui sat erit suspendere sulco :
illic, officiant laetis ne frugibus herbae,
hic, sterilem exiguis ne deserat humor harenam.
- (b) Non aliam ob culpam Baccho caper omnibus aris
caeditur et ueteres ineunt proscaenia ludi
praemiaque ingenniis pagos et compita circum
Thesidae posuere atque inter pocula laeti
mollibus in pratis unctos saluere per utros.
Nec non Ausonii, Troia gens missa, coloni
uersibus incomptis ludunt risuque soluto
oraeque corticibus sumunt horrenda cauatis
et to, Bacche, uocant per carmina laeta tibi
oscilla ex alta suspendunt mollia piau.
- (c) Sectus flagellis hic triumphalibus
praeconis ad fastidium
arat Falerni mille fundi iugera
et Appiam mannus terit,
sedilibusque magnus in primis eques
Othone contempto sedet.
Quid attinet tot ora nauium graui
rostrata duci pondere
contra latrones atque seruilem manum,
hoc, hoc tribuno militum ?
- (d) Non Afra auis descendat in uentrem meum,
non attagen Ionicus
iucundior, quam lecta de pinguissimis
oliua ramis arborum,
aut herba lapathi prata amantis et graui
maluae salubres corpori,
uel agna festis caesa Terminalibus,
uel haedus oreptus lupo.

2. (a) Explain the following expressions :—*ad capita diducere* ; 6
amite leni ; *editus austro* ; *indulgere ordinibus* ; *mouere imagines* ;
sacer nepotibus.

(b) Rewrite the following passage in dactylic hexameters :— 4

1. iam quae arbor se iactis seminibus sustulit
2. soris nepotibus umbram factura tarda uenit.
3. pomaque sucos priores oblita degenerant
4. et una turpes racemos auibus praedam fert.

(c) Show how the following words differ in meaning according 5
to quantity :—*uenis*, *nitentia*, *uomero*, *uiris*, *auis*.

(d) Discuss the textual difficulties in the following passages :— 6

- (i) Non illa quisquam me nocte per altum
 iro, neque ab terra moncat conuellerò funem.
- (ii) Aperit cum cornibus annum
 Taurus et auroso cedens Canis occidit astro.
- (iii) Forte quid expediat communiter aut melior pars
 malis carere quaeritis laboribus ?
- (iv) Te manet Assaraci tellus, quam frigida parui
 findunt Scamandri flumina, lubricus et Simois.

(e) Scan the following lines, naming the metre in each case :— 3

- (i) Cruore rubros obstetrix pannos lauit.
- (ii) Occasionem de die, dumque uirent genua.
- (iii) Fractosque remos differat.
- (iv) Hostiliumque nauium portu latent.

3. Translate the following passages into English, and illustrate 5
them from the first two books of Virgil's *Georgics* and from Horace's
Epodes :—

- (a) Ausa Ioui nostro latrantem opponero Anubim,
 et Tiberim Nili cogere ferre mias ;
 foedaque Tarpeio conopia tendere saxo,
 iura dare et statuas inter et arma Mari .
 Quid nunc Tarquinii fractas iuuat esse secures,
 nomine quem simili uita superba notat ;
 si mulier patienda fuit ? * Cape, Roma, triumphum,
 et longam Augusto salua precare diem .
- (b) Delicias quoque uti multas substernere possint
 gratius interdum, neque natura ipsa requirit
 si non aurea sunt iuuenum simulacra per aedes
 lampadas igniferas manibus retinentia doxtris,
 lumina nocturnis epulis ut suppeditentur,
 nec domus argento fulget auroque renidet
 nec citharae reboant laqueata aurataque tecta,
 cum tamen inter se prostrati in gramine molli
 propter aquae riuom sub ramis arboris altae
 non magnis opibus iucunde corpora curant,
 praesertim cum tempestas adridet et anni
 tempora conspergunt uiridantes floribus herbas.

4. Translate into *idiomatic* Latin prose :—

20

Far to the right where Apennine ascends,
 Bright as the summer, Italy extends :
 Its uplands sloping deck the mountain's side,
 Woods over woods in gay theatric pride ;
 While oft some temple's mould'ring tops between
 With venerable grandeur mark the scene.

Could Nature's bounty satisfy the breast
 The sons of Italy were surely blest.
 Whatever fruits in different climes are found,
 That proudly rise, or humbly court the ground ;
 Whatever blooms in torrid tracts appear,
 Whose bright succession decks the varied year ;
 Whatever sweets salute the northern sky
 With vernal lives that blossom but to die ;
 These, here disporting, own the kindred soil,
 Nor ask luxuriance from the planter's toil ;
 While sea-born gales their gelid wings expand
 To winnow fragrance round the smiling land.

Translate into *idiomatic* English prose :—

30

Candida sidereis ardescunt lumina flammis ;
 fundunt colla rosas, et cedit crinibus aurum ;
 mellea purpureum depromunt ora ruborem,
 lacteaquo admixtus sublimat pectora sanguis.
 ac totus tibi scrui honor, formaque dearum
 fulges et Venerem caelesti corpore uincis,
 argento stat facta manus, digitisque tenellis
 serica fila trahens, pretioso stamino ludis.
 Planta decens modicos nescit calcare lapillos,
 et dura laedi scelus est uestigia terra :
 ipsa tuos cum ferre uelis per lilia gressus,
 nulli sternuntur leuiori pondere flores.
 Guttura nunc aliae magnis monilibus orment,
 aut gemmas aptent capiti : tu sola placere,
 uel spoliata, potes. Nulli laudabile totum ;
 In te cuncta probat, si quisquam cernere possit,
 Sirenium cantus et dulcia plectra Thaliae
 ad uocem tacuisse, reof, quae mella propagas
 dulcia, et in miseros telum iacularis amoris.
 Cor graue uolnus alit, nullo sanabile ferro,
 sed tua labra meo saeuum de cordo dolorem
 depellant, morbumque animae medicaminis huius
 cura fuget, nec tanta putres uiolentia neruos
 dissecet, atquo tuae moriar pro crimine causae.
 Sed, si hoc grande putas, saltem concede precanti,
 ut iam defunctum niueis ambire laetertis
 digneris, uitamquo mihi post fata reducas.

LATIN.

SECOND HONOUR PAPER.

Examiner—REV. R. F. PEARCE, M.A.

The figures in the margin indicate full marks.

1. Translate the following, adding notes where required :—

(a) Lucumoni contra omnium heredi bonorum cum diuitiae 12
 iam animos facerent, auxit ducta in matrimonium Tanaquil summo
 oco nata et quae haud facilo iis. in quibus nata erat humiliora⁹ sineret

ea, quo innupsisset. Spernentibus Etruscis Lucumonem exule advena ortum ferre indignitatem non potuit, oblitaque ingenitae erga patriam caritatis, dummodo virum honoratum videret, consilium migrandi ab Tarquinii cepit. Roma est ad id potissimum visa : in novo populo, ubi omnis repentina atque ex virtute nobilitas sit, futurum locum forti ac strenuo viro ; regnasse Tatium Sabinum, accessit in regnum Numam a Curibus, et Ancum Sabina matre ortum nobilemque una imagine Numae esse. Facile persuadet ut cupido honorum et cui Tarquinii materna tantum patria esset. Sublatis itaque rebus amigrant Romam.

(b) Creditur, quia non abhorret a cetero scelere, admonitu Tulliae 13
id factum. Carpentio certo, id quod satis constat, in forum invecta nec reverita coetum virorum evocavit virum e curia regemque prima appellavit. A quo facessere iussa ex tanto tumultu cum se domum reciperet pervenissetque ad summum Cyprium vicum, ubi Dianium nuper fuit, flectenti carpentum dextra in Urbium clivum ut in collem Esquilium oveheretur, restitit pavidus atque inhibuit frenos is, qui iumenta agebat, iacentemque dominae Servium trucidatum ostendit. Foedum inhumanumque inde traditur scelus, monumentoque locus est : Sceleratum vicum vocant, quo amens agitantibus furiis sororis ac viri Tullia per patris corpus carpentum egisse fertur, partemque sanguinis ac caedis paternae cruento vehiculo contaminata ipsa respersaque tulisse ad penates suos virique sui quibus iratis malo regni principio similes prope diem exitus sequentur.

(c) Condemnatus est C. Iunius qui ei quaestioni praefuerat. Adde 12
etiam illud, si placet : tum est condemnatus cum esset iudex quaestionis. Non modo causae sed ne legi quidem quicquam per tribunal plebis laxamenti datum est : quo tempore illum a quaestione ad nullum aliud rei publicae munus abduci licebat, eo tempore ad quaestionem ipse abreptus est. At ad quam quaestionem ? vultus enim vestri, iudices, me invitavit ut quae reticenda putarem libere dicere. Quid ? illa tandem quaestio aut disceptatio iudicium fuit ? Putabo fuisse. Dicat qui vult hodie de illo populo concitato, cui tum populo mos gestus est, qua de re Iunius causam dixerit : quemcumque rogaveris hoc respondebit, quod pecuniam acceperit, quod innocentem circumvenit.

(d) In litibus aestimandis fore iudices aut, quod sibi eum quem 13
semel condemnarunt inimicum putant esse, si quae in eum lis capitis illata est, non admittunt, aut, quod se perfunctos iam esse arbitrantur, cum de reo iudicarunt, neglegentius attendunt cetera. Itaque et maiestatis absoluti sunt permulti, quibus damnatis de pecuniis repetundis lites maiestatis essent aestimatae, et hoc cotidie fieri videmus, ut reo damnato de pecuniis repetundis, ad quos pervenisse pecuniae in litibus aestimandis statutum sit, eos idem iudices absolvent : quod cum fit, non iudicia rescinduntur, sed hoc statuitur, aestimationem litium non esse iudicium.

2. Explain the following terms :—

(a) *spolia opima*, *pater patratus*, *interregnum*, *menses intercalarii*, *pomerium*, *provocatio*. 12

(b) *sequester*, *triumvir*, *praevaricor*, *subsortitio*, *subscriptio*, *referre in aerarios*.

3. What was the *Iunianum iudicium*, and how did it affect the case in which Cicero delivered his speech 'pro A. Cluentio' ? 6

4. Give the rules for the use of the gerund and gerundive participle, and describe the various senses in which they are employed. 5

What variations from the ordinary use are found in Livy ?

5. Translate into English :—

Tandem, nequidquam iumentis atque hominibus fatigatis, castra 12

iniugo posita, ægerrime ad id ipsum loco purgato : tantum nivis fodiendum atque egerendum fuit. Inde ad rupem muniendam, per quam unam via esse poterat, milites ducti, cum caedendum esset saxum, arboribus circa immanibus deiectis detruncatisque, struem ingentem lignorum faciunt : eamque (cum et vis venti apta faciendo igni coorta esset) succendunt, ardentiaque saxa infuso aceto putrefaciunt. Ita torridam incendio rupem ferro pandunt, molliuntque amfractibus modicis clivos, ut non iumenta solum, sed elephanti etiam, deduci possent. Quatriduum circa rupem consumptum, iumentis prope famæ absumptis : nuda enim fere cacumina sunt, et, si quid est pabuli, obruunt nives.

6. Translate into Latin :—

15

It is recorded of a Chinese Emperor, that on being apprised of his enemies having raised an insurrection in a distant province, he said to his officers, 'Come, follow me, and we shall quickly destroy them.' He marched forward, and the rebels submitted on his approach. All now thought that he would take the most signal revenge, but were surprised to see the captives treated with mildness and humanity. 'How!' cried the first minister, 'is this the way in which your promise is fulfilled? Your royal word was given that your enemies should be destroyed, and yet you have pardoned them all.' 'I promised,' replied the emperor, 'to destroy my enemies. I have fulfilled my word : for they are enemies no longer. I have made friends of them.'

LATIN.

THIRD HONOUR PAPER.

Examiner—HARINATH DE, ESQ., M.A. (*Cal. and Cantab.*).

The figures in the margin indicate full marks.

1. Translate two of the following passages into idiomatic Latin :—

- (a) When our dear parents died, they died together ;
 One fate surprised them, and one grave received them.
 My father with his dying breath bequeathed
 Her to my love : my mother, as she lay
 Languishing by him, called me to her side,
 Took me in her fainting arms, wept and embraced me ;
 Then pressed me close, and as she observed my tears,
 Kissed them away. Said she 'Chamont, my son,
 By this, and all the love I ever showed thee,
 Be careful of Monimia ; watch her youth ;
 Let not her wants betray her to dishonour.
 Perhaps kind heaven may raise some friend,'—then sighed ;
 Kissed me again : so blest us and expired.—OTWAY.

12

- (b) The Gods, who haunt
 The lucid interspace of world and world,
 Where never creeps a cloud, or moves a wind,
 Nor ever falls the least white star of snow,
 Nor ever lowest roll of thunder moans ;
 Nor sound of human sorrow mounts to mar
 Their sacred everlasting calm ! and such,

12

Nor all so fine, nor so divine a calm,
Nor such, nor all unlike it, man may gain
Letting his own life go. The Gods, the Gods
If all be atoms, how then should the Gods
Being atomic not be dissoluble,
Not follow the great law ?—TENNYSON.

- (c) And he shall charm and soothe, and breathe and bless, 12
The roaring of war shall cease upon the air,
Falling of tears and all the voices of sorrow.
And he shall take the terror from the grave.
And he shall still that old sob of the sea,
And heal the unhappy fancies of the wind,
And turn the moon from all that hopeless quest ;
Trees without care shall blossom, and all the fields
Shall without labour unto harvest come.—STEPHEN PHILLIPS

2. Translate into English :—

- (a) *The Argument from Design.* 13

Nec quicquam in tanta magis est mirabile mole,
quam ratio et certis quod legibus omnia parent.
Nusquam turba nocet, nihil ullis partibus errat,
laxius et leuius mutatoque ordine fertur.
Quid tam confusum specie, quid tam uice certum est ?
Ac mihi tam præsens ratio non ulla uidetur,
qua pateat mundum diuino numine uerti,
atque ipsum esse deum, nec forte coisse magistra,
ut uoluit credi qui primus moenia mundi
seminibus struxit minimis, inque illa resoluit :
e quis et maria et terras et sidera caeli
aetheraque immensos fabricantem finibus orbes
soluentemque alios constare, et cuncta reuerti
in sua principia et rerum mutare figuras.
Quis credat tantas operum sine numine moles
ex minimis caecoque creatum foedere mundum ?
Si fors ista dedit nobis, fors ipsa gubernet.
At cur dispositis uicibus consurgere signa,
et uelut imperio praescriptos reddere cursus
cernimus, ac nullis properantibus ulla relinqui ?
Cur eadem aestiuas exornant sidera noctes
semper, et hibernas eadem ? Certamque figuram
quibusue dies reddit mundo, certamque relinquit ?—MANILIUS.

- (b) *The Lover's Fears.* 13

Non ego nunc tristes uoreor, mea Cynthia, Manes,
nec moror extremo debita fata rogo ;
Sed, ne forte tuo careat mihi funus amore,
hic timor est ipsis durior exsequiis.
Non adeo leuiter nostris puer haecit ocellis,
ut meus oblito pulvis amore uacet
Illic Phylacides iucundae coniugis heros
non potuit caecis immemor esse locis ;
Sed cupidus falsis attingere gaudia palmis
Thessalis antiquam uenerat umbra domum.
Illic, quidquid ero, semper tua dicar imago :
traicit et fati litora magnus amor.
Illic formosae ueniant chorus horoinae,
quas dedit Argiuis Dardana praeda uiris :
Quarum nulla tua fuerit mihi, Cynthia, forma
Gratior, et tellus hoc ita iusta sinat ;

Quamuis te longae remorentur fata senectae,
 Cara tamen lacrimis ossa futura meis :
 Quae tu uiua mea possis sentire fauilla !
 Tum mihi non ullo mors sit amara loco.
 Quam uereor, ne te contemto, Cynthia, busto
 abstrahat heu ! nostro puluere iniquus Amor,
 Cogat et inuitam lacrimas siccare cadentes ;
 flectitur assiduus certa puella minis.
 Quare, dum licet, inter nos laetemur amantes :
 non satis est ullo tempore longus amor.—PROPERTIUS.

3. Translate the following passage, adding full notes on the subject-matter, and emending the text where necessary :— 18

Ergo, praeter inane et corpora, tertia per se
 nulla potest rerum in numero natura relinqui,
 nec quae sub sensus cadat ullo tempore nostros,
 nec ratione animi quam quisquam possit apisci.
 Nam quaecumque cluent, aut his coniuncta duabus
 rebus ea inuenies aut harum euenta uidebis.
 Coniunctum est id quod nusquam sine pernitiā
 discidio potis est seungi seque gregari,
 pondus uti saxi, calor ignis, liquor aquae,
 tactus corporibus cunctis, intactus inani.
 Seruitium contra, paupertas, diuitiaeque,
 libertas, bellum, concordia, cetera quorum
 aduentu manet incolumis natura abituque,
 haec soliti sumus, ut par est, euenta uocare.
 tempus item per se non est, sed rebus ab ipsis
 consequitur sensus, transactum quid sit in aëro,
 tum quae res instet, quid porro deinde sequatur ;
 nec per se quemquam tempus sentire fatendumst
 semotum ab rerum motu placidaque quiete.

4. Translate, adding brief notes on the italicised words and phrases :— 6

Pa. Perii, metuo ut substet hospes. *Ch.* Si, Simo, hunc noxīs satis,
 non ita arbitrero : bonus est hic uir. *Si.* Hic uir *sit* bonus ?
 Itane *attemperate* euenit, hodie in ipsis nuptiis
 ut ueniret, antehac numquam ? Est uero huic credundum,
 Chremes ?

Pa. Ni metuam patrem, habeo pro illa re illum quod moneam probe.
Si. *Sycophanta* ! *Cr.* Hem ! *Ch.* Sic, Crito, est hic : mitte. *Cr.*
 Vidoat qui siet.
 Si mihi perget quae uult dicere, ea quae non uult audiet.
 Ego istaec moueo aut euro ? Non tu tuom malum aequo animo
 feres ?

(a) State the law of '*breuis breuians*,' and scan the last line of the above extract. 3½

(b) Explain the following phrases :—'*aliud magis ex sese et maius* ; '*solus es quem diligant di* ; '*uos amolimini* ; '*non sat commode diuisa sunt temporibus haec* ; '*aeque quicquam nunc quidem*.' 2½

(c) Illustrate the Terentian uses of — *aduorsum*, *scitius*, *age*, *nempe*. 2

5. Translate into English, adding brief notes where necessary :— 18

(a) Ibo et Chalcidico quae sunt mihi condita uersu
 carmina, pastoris Siculi modulabor auena.

- (b) Nam neque adhuc Vario uideor, nec dicere Cinna digna, sed argutos inter strepere anser olores.
 (c) Iam fragiles poteram a terra contingere ramos ; ut uidi ut perii, ut me malus abstulit error !
 (d) Certantes quorum stupefactæ carmine lynces, est mutata suos requierunt flumina cursus.
 (e) His tibi Grynei nemoris dicatur origo : ne quis sit lucus, quo se plus iactet Apollo.
 (f) Aggredere o magnos (aderit iam tempus) honores, cara deum suboles, magnum Iouis incrementum.

LATIN.

FOURTH HONOUR PAPER.

Examiner—REV. R. F. PEARCE, M.A.

The figures in the margin indicate full marks.

1. Translate the following, giving notes where necessary :—

25

(a) Si te privatus lege curiata apud pontifices, ut moris est, adoptarem, et mihi egregium erat Gnaei Pompei et M. Crassi subolem in penates meos adsciscere, et tibi insigne Sulpiciae ac Lutatiae nobilitati decora tua adiecisse.

(b) Quartum Idus Ianuarias, foedum imbribus diem, tonitrua et fulgura et caelestes minae ultra solitum turbaverant. observatum id antiquitus comitiis dirimendis non tenuit Galbam quo minus in castra pergeret, contemptorem talium ut fortuitorum ; seu quae fato manent, quamvis significata, non vitantur. apud frequentem militum contionem imperatoria brevitae adoptari a se Pisonem exemplo divi Augusti et more militari, quo vir virum legat, pronuntiat.

(c) Omnium militum arma nobiscum sunt. Nec una cohors togata defendit nunc Galbam, sed detinet : cum vos adspexerit, cum signum meum acceperit, hoc solum erit certamen quis mihi plurimum imputet.

(d) Igitur laudata militum alacritate Vitellius ministeria principatus per libertos agi solita in equites Romanos disponit, vacationes centurionibus ex fisco numerat, saevitiam militum plerosque ad poenam exposcentium saepius adprobat, raro simulatione vinculorum frustratur.

(e) Celsus constanter servatae erga Galbam fidei crimen confessus, exemplum ultro imputavit. nec Otho quasi ignosceret, sed ne hostem metueret, conciliationes adhibens, statim inter intimos amicos habuit et mox bello inter duces delegit, mansitque Celso velut fataliter etiam pro Othone fides integra et infelix.

2. Compare the characters of Galba, Otho, and Vitellius, as described by Tacitus. 6

Give a short account of—Piso, Vinus, legio classica, Gallia Lugdunensis. 4

3. Translate into English :—

15

Quantum dolore acceperim et quanto fructu sim privatus et forensi et domestico Lucii fratris nostri morte, in primis, pro nostra consuetudine, tu existimare potes. Nam mihi omnia, quae iucunda

ex humanitate alterius et moribus homini accidere possunt, ex illo accidebant. Quare non dubito, quin tibi quoque molestum sit, cum et meo dolore moveare, et ipse omni virtute officioque ornatissimum, tuique et sua sponte et meo sermone amantem, affinem amicumque amiseris.

Quae tibi mandavi, et quae tu intelliges convenire nostro Tusculano, velim, ut scribis, cures, quod sine molestia tua facere poteris. Nam nos ex omnibus molestiis et laboribus uno illo in loco quiescimus. Q. fratrem cotidie expectamus. Terentia magnos articulorum dolores habet, et te et sororem tuam et matrem maxime diligit, salutemque tibi plurimam adscribit, et Tulliola, deliciae nostrae. Cura ut valeas, et nos ames, et tibi persuadeas te a me fraterne amari.

4. Translate into Latin :—

25

On the evening of the thirteenth of January, while the uncertainty about the elections was at its height, Clodius was returning from his country-house, which was a few miles from Rome on the Appian Way. Milo happened to be travelling accidentally down the same road, on his way to Lanuvium, and the two rivals and their escorts met. Milo's party was the largest. The leaders passed one another, evidently not intending a collision, but their followers, who were continually at sword's point, came naturally to blows. Clodius rode back to see what was going on: he was attacked and wounded, and took refuge in a house on the roadside. The temptation to make an end of his enemy was too strong for Milo to resist. To have hurt Clodius would, he thought, be as dangerous as to have finished him. His blood was up. The house was forced open. Clodius was dragged out bleeding: he was killed on the spot, and the body was left lying where he fell.

5. Describe the three main classes into which the languages of the world may be divided.

7

6. Break up the following words into their component parts, and show their formation :—*sumus, dederit, pango, regere*.

8

7. Explain the origin and formation of the principal case-endings in Indo-European languages.

10

FRENCH.

(FOR FEMALE CANDIDATES.)

FIRST PASS PAPER.

Examiner—REV. FATHER E. FRANÇOTTE, S.J.

The figures in the margin indicate full marks.

1. Translate :—

(a) *Abner*. Hé ! què puis-je au milieu de ce peuple abattu ?

Benjamin est sans force, et Juda sans vertu.

Le jour *qui* de leurs rois vit éteindre la race.

E'teignit tout le feu de leur antique audace.

'Dieu même,' disent-ils, 's'est retiré de nous. . .'

(b) (*Le Chœur*.) Des mers pour eux, il entr'ouvrit les eaux ;

D'un aride rocher fit sortir des ruisseaux.

Il nous donne ses lois, il se donne lui-même.

Pour tant de biens, il commande qu'on l'aime.

- (c) *Athalie*. Quel prodige nouveau *me* trouble et m'embarrasse ? 3
 La douceur de sa voix, son enfance, sa grâce.
 Font insensiblement à mon irimitié
 Succéder . . . Je serais sensible à la pitié ?
- (d) *Mathan*. Mon fils, nous attendrons : cessez de vous troubler. 2
 C'est votre illustre mère à *qui* je veux parler,
 Je viens ici chargé d'un ordre de la Reine.
- (e) *Josabet*. L'orage se déclare. 3
Athalie en fureur demande Eliacin.
 Déjà de sa naissance et fle votre dessein
 On commence, Seigneur, à percer le mystère :
 Peu s'en faut que Mathan ne m'ait nommé son père.
- (f) *Joad*. On *vous* a lu souvent l'histoire de nos rois. 2
 Vous souvient-il, mon fils, quelles étroites lois
 Doit s'imposer un roi digne du diadème ?
- (g) *Joas*. Je promets d'observer ce que la loi m'ordonne. 3
 Mon Dieu, punissez-moi si je vous abandonne !
Joad. Venez : de l'huile sainte il faut vous consacrer.
 Paraissez, *Josabet* : vous pouvez vous montrer.
- (h) *Zacharie*. Redoublez au Seigneur votre ardente prière. 2
 Peut-être nous touchons à notre heure dernière.
 Pour l'horrible combat, ma *cœur*, l'ordre est donné.
- (i) *Un lévite*. Le fer a de sa vie expié les horreurs. 3
 Jérusalem, longtemps en proie à ses fureurs,
 De son joug odieux à la fin soulagée,
 Avec joie en son sang la garde plongée.

2. Translate :—

(a) Your tears, Josabeth, have nothing criminal ; but God wills that we should hope in His paternal care. He does not, blinded in His wrath, seek vengeance for the impiety of the father upon the son who fears Him. All that still remain faithful among the Hebrews will come this day to renew their allegiance to Him. The daughter of Jezabel is as much abhorred as the race of David is respected. 4

(b) Thine eyes seek in vain a way of escape : Almighty God has secured thee. He, whom thou didst defy, hast delivered thee into our hands : to Him shalt thou now render an account for the blood thou hast so freely shed. 3

3. (a) In Extracts 1 (a-i), parse fully the eight italicised words. 8

(b) Give the principal parts of :—*que puis-je ?* (1. a), *éteindre* (1. a), *sortir* (1. b), *font* (1. c), *je viens* (1. d), *il s'en faut* (1. e), *vous souvient il ?* (1. f), keeping to the interrogative, affirmative, or impersonal turn, as the case may be. 7

(c) Who are the persons addressed in 1. a and c ?—under what circumstances ? 4

(d) Write French synonyms to :—*abattu*, *vertu*, *antique* (1. a) ; *diadème* (1. f) ; *ardente* (1. h). 3

(e) Distinguish between—*ruisseau*, *rivière*, *fleuve* ; *loi*, *précepte* ; *grâce*, *grâce* ; *dessein*, *dessin*. 4

(f) What allusions are embodied in—1. b (first and second line) ; also in 1. g (*Joad*, first line) ? 3

(g) What figures of speech are respectively contained in the following :—*Benjamin*, *feu* (1. a) ; *le fer*, *Jérusalem* (1. i) ; and the first half-line of 1. e ?—Explain. 5

(h) Scan clearly the first and second lines of 1. b. Point out an elision in 1. c. 3

(i) Re-write the second line of 1. d, in prose order ; also the whole passage 1. i. 5

4. Translate:—

(a) Le grand personnage ou plutôt l'unique d'*Athalie*, depuis le premier vers jusqu'au dernier, c'est Dieu. Dieu est là, au-dessus du grand prêtre et de l'enfant, et à chaque point de cette simple et forte histoire à laquelle sa volonté sert de loi ; . . . le personnage intéressant du drame, l'enfant miraculeux et saint, Joas, est brisé lui-même et flétri . . . Le vrai Joas de la pièce, à ce moment sublime où elle se transforme, . . . c'est le Christ. 7

(b) In the above italicised words (*est brisé . . . &c.*), what does Sainte-Beuve allude to? 3

(c) Give the general argument of *Athalie*. If written in French, a few lines will do. 10

(d) Sum up the answer of Racine himself, in his preface to *Athalie*. to possible criticisms against his master piece. 8

FRENCH.

(FOR FEMALE CANDIDATES.)

SECOND PASS PAPER.

Examiner—REV. FATHER E. FRANCOTTE, S.J.

The figures in the margin indicate full marks.

1. Translate into idiomatic English:—

(a) Si j'en crois mon cœur, c'est moi qui vous suis véritablement obligée de recevoir si bien le soin que je prends de vous instruire. Croyez-vous que je ne trouve point de consolation en vous écrivant ? Je vous assure que j'y en trouve beaucoup, et que je n'ai pas moins de plaisir à vous entretenir que vous en avez à lire mes lettres. 3

(b) Il y a une comète qui paraît depuis quatre jours. Au commencement elle n'a été annoncée que par des femmes, on s'en est moqué, mais présentement tout le monde l'a vue. M. d'Artagnan veilla la nuit passée, et la vit fort à son aise. M. de Neuré, grand astrologue, dit qu'elle est d'une grandeur considérable. J'ai vu M. de Foix, qui l'a vue également. 3

(c) Je suis fort aise que vous approuviez le mariage de Grignan : il est vrai que c'est un très-bon et un très-honnête garçon, qui a du bien, de la qualité, une charge, de l'estime et de la considération dans le monde. Que faut-il davantage ? Je trouve que nous sommes fort bien sortis d'intrigue. Puisque vous êtes de cette opinion, signez la procuration que je vous envoie, mon cher cousin, et soyez de la fête. 4

(d) Je dîne tous les vendredis chez le Mans avec M. de la Rochefoucauld, Mme de Brissac et Benserade, qui toujours y fait la joie de la compagnie. Votre santé y est toujours buée, et votre absence toujours regrettée. Si la Provence m'aime, je suis fort sa servante aussi. Conservez-moi l'honneur de ses bonnes grâces ; je lui ferai vos compliments quand vous voudrez. 4

(e) Vous avez écrit un billet admirable à Brancas ; il vous écrivit l'autre jour une main tout entière de papier ; c'était une rapsodie assez bonne ; il nous la lut. Je lui dis : 'Envoyez-le moi donc tout achevé pour mercredi.' Il me dit qu'il n'en ferait rien, qu'il ne voulait pas que vous le vissiez ; que cela était trop sot.—'Pour qui nous prenez-vous ? vous nous l'avez bien lu.' 4

(f) Nous lisons aussi l'histoire de France depuis le roi Jean. je 3
veux la débrouiller dans ma tête, au moins autant que l'histoire
romaine, où je n'ai ni parents, ni amis ; encore trouve-t-on ici des noms
de connaissance. Heureusement que nous avons des livres.

(g) Vous pourrez aussi faire un grand feu dans votre chambre. 3
brûler du genièvre aux quatre coins, vous environner de vinaigre
impérial, de rue et d'absinthe. Si vous pouvez trouver vos sûretés
dans ces propositions sans que je me coupe les cheveux, je vous jure
de les exécuter très-religieusement ; . . .

(h) On reliausse le potage de trois poulets et de quantité de pois 4
verts, et pendant qu'un homme de cheval va quérir des fraises à Bag-
nolet, on fait travailler en tartes et en gâteaux les plus renommés
pâtisseries de Charenton. On met le couvert dans le jardin, et on
couvre de fleurs nouvelles la nappe et les serviettes qui sentaient fort
la lavande.

2. (a) Parse fully the eight words and combinations of words itali 8
cised in the above.

(b) Give the principal parts of :—croire, croître, boire, lire. 6

(c) Distinguish between the meaning or shade of meaning in the 8
following :—veille, vieille ; fête, faite, faite, fait (*noun*). faites ; joy-
eux, joyau ; main, maint ; le grand feu allumé par un tel, feu un tel ;
pâtissier, tapisserie ; ne . . . pas, ne . . . point.

3. (a) Comment briefly on the witty remark of Mme de Sévigné 3
in 1 (e). 'Pour qui nous prenez-vous ? &c.', showing that you have
understood it.

(b) Justify, by a general remark, the frequent use made by Mme 2
de Sévigné of the adverb *fort*.

(c) Write a few lines, in French, on the playful and artless style 10
of her letters.

4. Translate :—

(a) Une foule qui remplissait la rue Saint-Honoré passa comme 6
un flot. Au-dessus des têtes, l'abbé de Marolles, cédant à un mouve-
ment de curiosité, vit debout sur la charrette celui qui, trois jours
auparavant, écoutait sa messe.—'Qui est-ce,' dit-il, 'celui qui . . .'
—'C'est le bourreau,' répondit monsieur Ragon en nommant l'exécuteur
des hautes œuvres par son nom monarchique.—'Mon ami ! mon
ami !' cria Mme Ragon, 'monsieur l'abbé se meurt.' Et la vieille
dame prit un flacon de vinaigre pour le faire revenir à lui.

(b) 'Prends garde à toi, Guillaume, prends garde,' s'écria Fran- 6
çois en s'élançant à la poursuite de l'ours et oubliant tout pour ne
penser qu'à son ami ; car il vit bien que, si Guillaume n'avait pas eu
le temps de recharger son fusil, il était perdu ; l'ours l'avait éventé.
Il n'avait pas fait dix pas qu'il entendit un cri. Celui là, c'était un cri
humain, un cri de terreur et d'agonie tout à la fois ; un cri dans lequel
celui qui le poussait avait rassemblé toutes les forces de sa poitrine,
toutes ses prières à Dieu, toutes ses demandes de secours aux hom-
mes : 'A moi ! . . . ' Puis rien, pas même une plainte . . .

(c) 'Si tu avais seulement deux mille ans,' répondit le vieux roi, 3
'je t'accorderais bien volontiers la princesse, mais la disproportion est
trop forte, et puis il faut à nos filles des maris qui durent, vous ne savez
plus vous conserver ; . . . regarde, ma chair est dure comme du
basalte. . . .'

(d) Nous voici dans la rue, et il cabre son torse sous sa redingote 4
sermée comme une tunique, sans avoir l'air de se douter que par cette
fin de février il gèle ferme. Il frappe le trottoir de son pied qu'il a
mince et joli malgré sa haute taille. Il a planté son chapeau sur le
coin de sa tête avec des allures de képi. Il porte beau. Mais il en a
le droit . . .

5. (a) Write a short biographical notice of each of the following 12
authors, and enumerate their chief literary productions :—H. de
Balzac, A. Dumas, F. Coppée.

(b) Translate idiomatically :—Il pleuvait depuis quatre jours ; 4
how far is it ? how far it is ! coucher en joue ; dix mille livres de
rente ; sauf votre respect ; un prudent demijour ; une ribambelle
d'enfants.

SANSKRIT.

FIRST PASS PAPER.

Paper-Setters— { MAHAMAHOPADHYAY HARAPRASAD SASTRI,
M.A.,
BABU NRISINHACHANDRA MUKERJEE, M.A.
RAI RAJENDRACHANDRA SASTRI, BAHADUR,
M.A.

Examiners— MAHAMAHOPADHYAY HARAPRASAD SASTRI,
M.A.
PANDIT ASUTOSH SASTRI, M.A.

The figures in the margin indicate full marks.

1. What is the function of a Vidūsaka in a Sanskrit drama ? Com- 8
pare and contrast the characters of the Vidūsakas in the *S'akuntalā* and
in the *Ratnāvalī*.
2. Is there any significance in the name Sārṅgarava, consider- 5
ing his character as described in the play ? Contrast the characters
of the two pupils of Kaśyapa.
3. Why did Sānumatī come to Hastinā ? Why did she go to the 7
palace ? And why did the poet make her invisible ?
4. Comment on Kālidāsa's similes in general, and explain fully the 15
points of similitude in the following :—

(a) व्यपदेशमाविलयितुं किमौहवे जनमिमं च पातयितुम् ।

कूलं कषेव सिन्धुः प्रसन्नममस्तटतरे च ॥

(b) इदमुपनतमेवं रूपमस्तिषृकान्ति

प्रथमपरिग्रहीतं खान्न वेति व्यवसन् ।

अमर इव निशान्ते कुन्दमन्तस्तुषारं

न च खलु परिभोक्तुं नेव शक्नोमि ज्ञातुम् ॥

(c) कृत्ययोर्भिन्नदेशत्वाद् द्वैधीभवति मे मनः ।

पुरः प्रतिष्ठतं शैले खोतः खोतोवहो यथा ॥

Derive the words underlined. What is the use of निशान्ते in couplet
(b) ?

5. Render the following into Sanskrit and explain fully in that language :—

पथमत चलथे इन्दस इन्दसाल त्त लडुयामस ।

तह एव अजअसुरस सम्बरस सुपरिरेडुयस ॥

देव किं—

धरणीए मिअअङ्को आआवे महिअरो जले जलजो ।

मज्झिम्मि पओओ विज्जत तह वेहि आणत्तिं ॥

अहवा—

किं जप्पिदेण बहुया जं जं हिअएण महसि संदिट्ठं ।

तं तं दंसेमि अहं गुणयो मन्तपपहावेण ॥

6. Translate into English :—

9

(a) कौशैः पिष्टातकौघैः कृतदिवसमुखैः कुङ्कुमसोदगोरै-

हैमालंकारभाभिर्भरनमितशिरःशेखरैः कैङ्करातैः ।

एषा वेषाभिलक्ष्यस्वविभवविजिताशेषवित्तेशकोशा

कोशाम्बी शातकुम्भद्वयखचितजनेवैकपीता विभाति ॥

(b) पालीयं सम्पकानां नियतमयमसौ सुन्दरः सिन्दुवारः

साम्ना वीथी तथेयं बकुलविटपिर्ना पाटलापंक्तिरेषा ।

आघ्रायाघ्राय गन्धं विविधमधिगतैः पादपैरेवमस्मिन्

व्यक्तिं पन्थाः प्रयाति द्विगुणतरतमोनिर्जुतोऽप्येष चित्रैः ॥

(c) अस्मात्परं यत यथाश्रुति संभृतानि

को नः कुले विप्रेणा नियच्छतीति ।

नूनं प्रसूतिविकलेन मया प्रसिक्तं

धौताशुशेषमुदकं पितरः पिबन्ति ॥

Where is Kauśāmbī, and what is supposed to be its modern name ? 2

7. Correct the following :—वैन राजानं धनं याचते । न एव हृष्टो 5
विरमते । मोक्षमनोर्षं पितुरक्षयसर्गकामः । इदं विप्रेभ्यो ददे । एतत् पुण्यं
त्रिबाह सर्वस्मै नमः । रामेण पूजितो विष्णुरेवं सुहि विचक्षण ।

8. Explain in Sanskrit, and form a critical estimate of the poetry :— 6

विधायापूर्वपूर्वकुम्भा मुचमसूनुवम् ।

धाता निाचनाम्भोजावनिमौलननुःस्थितः ॥

9. Explain in Sanskrit :—

6

ब्राह्मणः । यन्मित्रः समयादिमां मदीयां वृद्धितरं भवानुपायंस्त
तन्मया प्रीतिमता युवयोरनुज्ञातम् । कुतः ।

त्वमर्हतां प्राप्नुयस्वः स्मृतोऽसि नः .

अकुन्तला मूर्तिमती च सत्क्रिया ।

समानयंस्तुल्यगुणं वधूवरं

चिरञ्च वाच्यं न गतः प्रजापतिः ॥

Account for the *ātmanepada* in उपायंस्त, the sixth case ending in 4
युवयोः and मा, and the singular number in वधूवरम् .

10. Explain the following verse fully in Sanskrit :—

5

कामं प्रिया न सुलभा मनस्तु तद्वावर्शनायासि ।

अकृतार्थेऽपि मनसिजे रतिमुभयप्रार्थना कुरुते ॥ .

The reading is sometimes आवासि instead of आयासि. Which of 3
the readings do you prefer, and why ?

11. Translate into idiomatic Sanskrit :—

6

He was well read in the Vedas.
The elephant is killed for the skin.
Rāma was anxious for his friend.
I do not like this.
From Ayodhyā to Benares is 50 miles.
He went there for the purpose of study.

SANSKRIT.

SECOND PASS PAPER.

Examiners—{ MAHAMAHOPADHYAYA SATISCHANDRA VIDYA-
BHUSHAN, M.A.
BABU UMACHARAN BANERJEE, M.A.

The figures in the margin indicate full marks.

1. Explain fully the following *ślokas* in your own words in Sanskrit, 20
referring to the context in each case :—

(a) चन्द्रं गता पद्मगुणाद्गुणं सुकृते पद्माश्रिता चाक्षमशोभनित्याः ।

समासुखं तु प्रितपद्य लोका द्विवंश्या प्रीतिमवाप सखीः ॥

- (b) स द्विनेत्रं हरेस्तुः सहस्रनयनाधिकम् ।
वाचस्पतिरुवाचेदं प्राञ्जलिर्जलज्जलनम् ॥
- (c) मधुश्च ते मन्मथ साहचर्यादसावनूक्तोऽपि सहाय एव ।
समीरणो नोदयिता भवेति व्यादिश्यते केन हुताशनस्य ॥
- (d) इत्थं रतेः किमपि भूतमदृश्यरूपं
मन्दोचकार मरणव्यवसायबुद्धिम् ।
तत्प्रत्ययाच्च कुसुमायुधबन्धुरेनाम्
आश्वासयत्सुचरितार्थपदैर्वचोभिः ॥
- (e) यदुच्यते पार्वति पापवृत्तये न रूपमित्यध्यभिचारि तद्वचः ।
तथाहि ते श्रौलमुदारदर्शने तपस्विनामप्युपदेशतां गतम् ॥

2. Translate the following *ślokas* into English with references to the context in each case :— 15

- (a) अवचितबलिपुष्पा वेदिसंमार्गदत्ता
नियमविधिजलानां बर्हिषां चोपनेत्री ।
गिरिशसुपचचार प्रत्यहं सा सुकेशी
नियमितपरिखेदा तच्छिरश्चन्द्रपादैः ॥
- (b) वर्षप्रकर्षं सति कर्णिकारं दृनोति निर्गन्धतया स चेतः ।
प्रायेण सामग्यविधौ गुणानां पराङ्मुखौ विश्वक्षजः प्रवृत्तिः ॥
- (c) स्मरकं धाम्भूतमयुरमनेत्रं पश्यन्नवूरान्मनसाप्यधृष्यम् ।
नालक्षयत्साध्वसन्नहस्तः स्रस्तं शरं चापमपि स्वहस्तात् ॥

(1) In extract (a), change the voice of the principal verb, stating all consequent changes. Give the third person singular of the root of चित् in *lit.* What is the alternative form of सुकेशी? State if there be any difference in the application of the two forms. 7

(2) In extract (c), account for the fifth case-ending in चकूरात्. Give the third person singular of स्रस् in *lit.* 3

3. Give the substance of the following *ślokas* in your own words in Sanskrit :— 15

- (a) दिने दिने सा परिवर्धमाना लब्धोदया चाक्षमसौव लेखा ।
पुपोष सावध्यमयान् विविधोत्थान्तराणीव कलान्तराणि ॥
- (b) हरस्तु किञ्चित्परिबुद्धैर्यज्ञद्विदयारम्भं वाञ्छुराशेः ।
उमामुखे विम्बफलाधरोष्ठे व्यापारयासास विलोचनानि ॥

(c) अलभ्यशोकाभिभवेयमाकृतिर्विमानना सुधु कुतः पितुर्गृहे ।

पराभिमर्शो न तदास्ति कः करं प्रसारयेत्पद्मगरत्रसूचये ॥

(1) In extract (a), substitute one word for दिने दिने. Give all possible forms of the third person singular of पुष in *lat* and *lun*. 4

(2) In extract (c), is the form सुधु strictly grammatical? State reasons for your answer. Account for the fourth case-ending in पद्मगरत्रसूचये. 4

4. प्रालेयाद्वैरुपतटमतिक्रम्य तांस्तान् विशेषान्

हंसद्वारं भृगुपतियशोवर्त्म यत्क्रौञ्चरन्ध्रम् ।

तेनोद्गीर्णं दिग्भ्रमनुसरेत्स्त्रियगायामशोभौ

श्यामः पादो बलिनियमनाभ्युद्यतस्येव त्रिषाणोः ॥

Explain the allusions contained in the above *śloka* in your own words in Sanskrit. 8

5. Explain :— 5

आलोके ते निपतति पुरा सा बलिव्याकुला वा

मत्सादृश्यं विरहतनुं वा भावगम्यं लिखन्ती ।

पृच्छन्ती वा मधुरवचनां सारिकां पञ्जरस्थाम्

कच्चिद्भर्तुः स्मरसि रसिके त्वंहि तस्य प्रियेति ॥

(1) Account for the *lat* in निपतति. 2

(2) Account for the sixth case-ending in भर्तुः. 3

(3) In what cases does the root स्मृ take the *ātmanepadiya* form? 2

Illustrate your answer with examples.

6. Translate into Sanskrit :— 12

I recollect that moment full of joy and perplexity, when for the first time I was aware of my existence. I did not know what I was, where I was, or where I came from. I opened my eyes : how my sensations increased ! The light, the vault of heaven, the verdure of the earth, the crystal of the waters, everything interested me and gave me an inexpressible sentiment of pleasure.

SANSKRIT.

FIRST HONOUR PAPER.

Examiner—RAI RAJENDRACHANDRA SASTRI, BANARAS, M.A.

The figures in the margin indicate full marks.

1. Form a critical estimate of the character of Dushyanta as a king and a statesman, supporting your answer with references to the text. 10

2. Quote or refer to passages in the *Sankuntalā* which afford glimpses of manners and customs of a remote age, and have a possible bearing on the date of the poet.

- (1) गच्छति पुरः शरीरं धावति पद्मादसंस्थितं चेतः ।
चैनांशुकमिव जेतोः प्रतिधातं नीयमानस्य ॥
- (2) आ जन्मनः शाश्वतमशिक्षितो यस्तस्याप्रमाणं वचनं जनस्य ।
परार्तिबंधानमधीयते यैर्विद्येति ते सन्तु किलापवाचः ॥
- (3) प्राहुर्द्वादशधास्थितस्य मुनयो यत्तेजसः कारणम्
भर्तारं भुवनत्रयस्य सुषुप्ते यद्यज्ञभागेऽस्मिन् ।
यस्मिन्नात्मसुखः परोऽपि पुरुषश्चक्रे भवार्थाख्यं
दृष्ट्वं दत्तमरौचिसंभवमिदं तत्तत्पुत्रेकान्तरम् ॥
- (4) रम्यं द्रष्टुं यथा पुरा प्रकृतिभिर्न प्रत्यक्षं सेव्यते
शय्याप्राप्तविवर्तनेर्विगमयत्युन्निद्र एव क्षपाः ।
दाक्षिण्येन ददाति वाचमुचितामन्तःपुरेभ्यो यदा
गोत्रेषु स्थलितस्तदा भवति च व्रीडाविलक्षश्चिरम् ॥

3. (a) Explain clearly in Sanskrit the simile in (1). How would you analyse the compound प्रतिधातम्, and why ?

(b) Refer to the context and give the sense of (2) in simple Sanskrit of your own composition. Parse शाश्वतमशिक्षितः. In what sense is वाच used in वाचमुचिताः ? Has it any other sense ? Is the form अशिक्षितः rightly used in the *śloka* ? Give reasons for your answer. Change the voice of the *śloka*.

(c) Explain in Sanskrit the allusions contained in *śloka* (3). Parse the underlined words in the same. What is meant by एकान्तरम् in the fourth line ? What does it mean when used as an adjective with जाति (caste) ?

(d) Refer to the context and explain *śloka* (4) in Sanskrit in the *ṭīkā* form. Account for the case-suffixes in the underlined words in the *śloka*. Give the third person singular forms in *luṅ* of the bases of द्रष्टुं, विगमयति, ददाति, and सेव्यते in the active voice.

4. Derive and give the different meanings of—

(a) परिपक्व, उपपन्न, आरक्षक, उपीड, अवलीड नैमित्तिक, अभिनिवेश, and आधि.

(b) Construct sentences to illustrate the uses of the following forms and expressions :- दास्याः पुनः, भुविह (adv.), अत्यन्त, अन्तरेण, अत्र (adv.), अदृष्टावयम्, अवोधपूर्वम्, and वलवत्.

5. To what class of dramatic compositions does the *Ratnāvalī* belong, and why ? 5

6. Show by a reference to the text how the story of the *Ratnāvalī* is foreshadowed in the benedictory verses in the beginning. Write your answer in Sanskrit. 5

7. Examine and illustrate, by a reference to the plot, the following expression of opinion on the *Ratnāvalī* :— 5

'In the circumscribed limits of the action, we have no right to expect much contrast or development of character, and it is enough that all the individuals introduced preserve their identity. This is true even of the chambermaids, and the obliging confidant of the heroine is distinguishable from the termagant adviser of the queen.' Answer either in English or in Sanskrit.

8.

(1) संप्राप्तं मकरध्वजेन मथनं त्वत्तो मदर्थं पुरा
तद्युक्तं बहुमार्गां मम पुरो निर्लज्ज वोढुस्तव ।
तद्विदुर्गच्छ भावकुटिलां चै कृष्णकण्ठ ग्रहं
मुञ्चेत्याह रुषा यमद्वितनया लक्ष्मीश्च पायात्स वः ॥

(2) प्रारम्भेऽस्मिन् स्वामिनो वृद्धिहेतो देवेनेत्यं दत्तहस्तावलम्बे ।
सिद्धेर्नान्तिर्नास्ति सत्यं तथापि स्वेच्छाचारी भौत स्वास्ति भर्तुः ॥

(3) अर्ध्यानं नैकचक्रः प्रभवति सुवननान्तिरीर्धं विलङ्घ्य
पातः प्राप्तुं रथो मे पुनरिति मनसि न्यस्तचिन्तातिभारः ।
संध्याकृष्णवशिष्ठस्वकरपरिकरस्वष्ट्रमारपङ्क्ति
व्याकृष्यावस्थितोऽस्तचित्तिभृति नयतीवेष दिक् चक्रमर्कः

(4) मूले गण्यप्रसेकासव इव बहुलैर्वाग्यो पुष्पवृष्टा
मध्यातामे तरुण्या मुखशशिनि चिराच्चम्पकान्यद्य भान्ति ।
आकर्ष्यांशोऽपदाहतिषु च रसतां निर्भरं नूपुराणां
भङ्गारखानुगौतेरनुकरणमिवारभ्यते भङ्गसार्थः ॥

(a) Explain *śloka* (1) in the above in Sanskrit so as fully to bring out its double sense. Analyse the metre of the *śloka*. 8

(b) Explain the references to the plot contained in *śloka* (2), and give its meaning in English. 6

(c) Give the sense of *śloka* (3) in your own words in Sanskrit. Name and expound the *samāsas* in the third line of the *śloka*. 10

(d) Turn *śloka* (4) into prose order, and translate it into English. 7

SANSKRIT.

SECOND HONOUR PAPER.

Examiner—RAI RAJENDRACHANDRA SASTRI, BAHADUR, M.A.

The figures in the margin indicate full marks.

1. Reproduce in simple Sanskrit the picture of an ideal king drawn by the *Vanechara* in the *Kirātārjunīya*. 6
2. Give a summary in Sanskrit, not exceeding twenty lines, of the conversation between Draupadī, Bhīmasena, and Yudhishtīra, noticing the points specially made by each. 6

(1) असक्तमाराधयतो यथायथं विभज्य भक्त्या समपक्षपातया ।

गुणानुरागादिव सख्यमीयवान्न बाधतेऽस्य त्रिगणः परस्परम् ॥

(2) अनारतं तेन पदेषु लम्बिता विभज्य सम्यग्विनिर्णयसत्क्रियाः ।

फलान्त्युपायाः परिदृष्टितायनीरुपेत्य संघर्षमिवार्थसंघट्टः ॥

(3) प्रभवः खलु कोशदण्डयोः कृतपञ्चाङ्गविनिर्णयो नयः ।

स विधेयपदेषु दक्षतां नियतिं लोके इवानुसूच्यते ॥

(4) स्मृता न पदेरपाकृता न च न स्त्रीकृतमर्थगौरवम् ।

रचिता पृथगर्थता गिरां न च सामर्थ्यमपोहितं क्वचित् ॥

3. (a) Turn *śloka* (1) into prose order, and carefully note the meanings of the underlined words. Write grammatical notes on परस्परम्. Inflect the bases of इयवान् and परस्परम् with the second, the fourth, and the seventh case-ending in the neuter gender. Parse परस्परम्. Give the sense of the *śloka* in your own words in Sanskrit. 8

(b) Refer to the context and explain *śloka* (2) in Sanskrit. How would you construe विनिर्णयसत्क्रियाः, and why? Derive लम्बिताः, and explain the rule which specially applies to the formation of this word. 7

(c) Write explanatory notes on *śloka* (3), and give a close English translation of it. What kind of compound is कृतपञ्चाङ्गविनिर्णयः, and what is its principal characteristic? 8

(d) Carefully distinguish between the different excellences of style mentioned in *śloka* (4), and note the defect or defects which each of them is intended to exclude. Write a grammatical note on चर्चगौरवम्. Justify the use of the form पृथगर्थता. Decline the base of गिरां in the locative. 7

4.

- (1) अविवृणतया तथापि ने हृदयं निर्णयमेव धावति ।
अवसाययितुं क्षमाः सुखं न विधेयेषु विशेषसंपदः ॥
- (2) मधुरैरवशानि लम्पयन्नपि तिर्यञ्चि शमं निरौत्तितैः ।
 परितः पशु बिभ्रदेनसां दहनं धाम विलोकनक्षमम् ॥
- (3) चितच्छदानामपदिश्या धावतां स्तेरमौषां ग्रथिताः पतत्रिणाम् ।
 प्रकुर्वते वारिदरोधनिर्गताः परस्वरालापमिवामला दिशः ॥
- (4) असावनास्यापरयावधीरितः सरोरुद्विष्टा शिरसा नमन्नपि ।
 उपैति शुष्यन् कलमः सहाम्भसा मनोमुद्रा तप्त इवाभिपाङ्कताम् ॥

(a) Refer to the context and give the sense of (1) in your own words in Sanskrit. Derive अवसाययितुम्, and give the present and the past participle forms of the root. How would the second half of the *śloka* read in the non-causal form? Parse the underlined words in the *śloka*. 9

(b) Explain by a reference to the rules of grammar the construction in the first half of *śloka* (2). Explain the *śloka* in Sanskrit in the *īkā* form. Decline the base of तिर्यञ्चि in the masculine and the neuter gender. 6

(c) Translate *śloka* (3) into English. Account for the use of the *ātmanepada* in प्रकुर्वते. Construct sentences to illustrate the different meanings of the word. 6

(d) Turn *śloka* (4) into prose order, and clearly express in Sanskrit the idea which is sought to be conveyed by implication. Write a note on the etymology of अवधीरित, and illustrate your answer with examples. Give the third person singular in *lun* of the root of the word. 6

5. Distinguish between the characters of तमसा and वासन्तो, लव and कुश, and अरन्धतौ and कौशल्या, and show how far any one of them is needed to help the plot or sustain the interest in the story. Support your answer with quotations from the text. 6

6. Refer to the context and explain in simple Sanskrit :— 7

(1) यत्पुनर्वदसि किं नु भवतस्सातप्रतापोत्कर्षप्यमर्ष इति तत् पृच्छामि किं व्यवस्थितविषयाः क्षत्रधर्मा इति ।

(2) परिपूतस्वभावोऽयं कुमारः प्राचेतसान्तेवासी वदत्यभिषेपमार्गस्य संकारेण ।

(3) आसदग्नयश्च दमनः च राज्ञेति कोऽयमुद्येर्वादः ।

(4) को विचारः स्नेहूपकरणेषु । किं त्वरख्यसदो व्ययमनभ्य-
स्तरथचर्याः ।

(5) सर्वथा स एव भगवाननेकवारपरिकल्पनानिर्मितो विप्र-
सम्भः पुनः पुनरनुबध्नाति मासु ।

(6) अपरेऽपि परमोपबोधोऽस्मानसस्त्वप्रकाशाः स्वयं हि मन्त्रदृशः
पश्यन्ति ।

(7) आशंसनीयपुण्यदर्शनः स महात्मा किं तु कथमस्माभिरप-
गन्तव्य इति न संप्रधारयामि ।

7. Give the sense in which the following words and expressions are 5
used in the *Uttara-rāma-charita* :—आनन्दः, मोदः, वैराजः, भद्रम्,
परोरजाः, चार्धं विज्ञानम् विभुतम्, चासक्तिः, क्षणोद्यम्, अप्रतिस्नेयम्,
and अनिवन्धनम्.

8. Describe the incidents in the story of the *Uttara-rāma-charita* 5
which prove Bhavabhūti's predilection for Vedic manners and
customs.

9. Translate the following passage into English :— 8

तेन खलु पुनः समयेन तं भगवन्तमाविर्भूतशब्देब्रह्मप्रकाशसृषि-
सुपगम्य भगवान् भूतभावनः पद्मयमेनिरवोचत् । शृष्टे प्रबुद्धोऽसि वागात्मनि
ब्रह्मणि तद् ब्रूहि रामचरितम् । अव्याहृतव्योतिराद्यं ते प्रातिभं चक्षुः ।
आद्यः कविरसौत्युक्ता तत्रैवान्तर्हितः । अथ भगवान् प्राचेतसः प्रथमं
मनुष्येषु शब्दब्रह्मणस्तादृशं विवर्तमितिहासं रामायणसृषिः प्रणिनाय ॥

SANSKRIT.

THIRD HONOUR PAPER.

Examiner—MAHAMAHOPADHYAY HARAPRASAD SASTRI, M.A.

The figures in the margin indicate full marks.

1. Explain the following *śloka*s fully in your own words in Sanskrit, 18
referring to the context in each case, and writing grammatical notes
on the underlined words :—

(a) सर्वोपमाद्रव्यसमुच्चयेन यथाप्रवेशं विनिवेशितेन ।

वा निर्मिता विश्वसृजा प्रयत्नादेकस्थसौन्दर्यविदुस्तयेव ॥

(b) तस्मै शशंश्च प्रणिपत्य नन्दौ शुभ्रूषया शैलसुतामुपेताम् ।

प्रवेशयामास च भर्तुरेनां भूत्सेपमात्रानुमतप्रवेशाम् ॥

(c) कृताभिषेकां हुतज्ञानवेदसं त्वगुत्तरावङ्गवतीमधीतनीम् ।

दिदृक्षत्तवस्तासुषयोऽभ्युपागमन्न धर्मवृद्धेषु वयः समीक्ष्यते ॥

(d) तं वीक्ष्य वेपथुमती सरसाङ्गयष्टि

निक्षेपणाय पदमुद्धतमुद्धन्ती ।

मार्गाचलव्यतिकराकुलितेव शिखुः

शैलाधिराजतनया न स्यो न तस्यो ॥

(1) Can you quote any authoritative text in support of the sentiment in the last line of extract (c) ? 2

(2) In extract (d), some commentators read निक्षेप एव instead of निक्षेपणाय . Which reading do you prefer, and why ? Clearly explain the simile in the third line. 3

2. Describe in your own words in Sanskrit the principal traits of Pārvatī's character as described in the *Kumārasambhavam*, with apt quotations in support of your answer. 5

3. What is your opinion of Kālidāsa as a landscape-painter ? Illustrate your answer with apt quotations from his writings. 3

4. Explain the following *ślokas* in Sanskrit, clearly expounding all allusions, and giving geographical notes on the places mentioned :— 11

(a) ब्रह्मावर्तं जनपदमथ च्छायया गाहमानः

क्षेत्रं क्षत्रप्रधनपिशुनं कोरवं तद्भजेष्टथाः ।

राजन्यानां श्रितशरशतेर्यत्र गाण्डीवधन्वा

धारापातेस्त्वमिव कमलान्धभवर्धन्मुखानि ॥

(b) तस्माद्रक्षेरुनुकनखलं शैलराजावतीर्णां

जङ्घोः कन्यां सगरतनयस्वर्गसोपानपङ्क्तिम् ।

गौरीवक्त्रभृकुटिरचनां या विहस्येव फेनेः

शम्भोः केशग्रहणमकरादिन्दुलग्नेर्महता ॥

Give a clear exposition of all the essential points involved in the beautiful figure of speech in (b). 2

5. Translate the following into English, with clear references to the context in each case :— 12

(a) श्रुताप्सरोगीतिरपि क्षणोऽस्मिन् हरः प्रसङ्गानपरो बभूव ।

आत्मेष्टराणां न हि जातु विघ्नाः समाधिभेदप्रभवा भवन्ति ॥

- (b) अनन्यभाजं पतिमाप्नुहीति सा तथ्यमेवाभिहित्ता भवेत् ।
न हीनरव्याहृतयः कदाचित्पुष्पान्ति खोको विपरीतमर्थम् ॥
- (c) शुचो वर्तुषां स्वलतां शुचिस्मिता हविर्भुजां मध्यगता सुमथसा ।
विजित्य नेत्रप्रतिधातिनीं प्रभामनन्यदृष्टिः सवितारमेक्षत ॥
- (d) यदा च तस्याधिगमे जगत्पतेरपश्यदयं न विधिं विचिन्वती ।
तदा सहासाभिरनुज्ञया गुरोरियं प्रपन्ना तपसे तपोवनम् ॥

(1) Amplify the idea contained in the last two lines in extract (a) into a very short essay in Sanskrit not exceeding ten lines of your writing. 3

(2) Expound the *samāsas* in अनन्यभाजम् in extract (b), and account for the *pūrvadbhāva* in सन्या. (Give the third person singular of चाप in *lit.*, as also the past participle (*ktā*) of the same root in its desiderative (*sananta*) form. 5

(3) With reference to extract (c), commentators give the explanation पञ्चाग्निमध्ये तपश्चकारित्यर्थः । Point out the fifth fire referred to. 1

(4) In the same extract, comment grammatically on the orthography of the word प्रतिधातिनीम्, giving its derivation. 2

(5) In extract (d), account for the fourth case-ending in तपसे. In what cases does the root ज्ञा take the *ātmanepadīya* form? Illustrate your answer with examples. 3

6. Derive the word कुबेर. Who was कुबेर, and what were his functions? 2

7. Give, as briefly as possible, a summary in English of the conversation between Pārvatī and her future husband in disguise, as described in the fifth canto of the *Kṛmūra-sambhavam*. 4

8. Correct or justify the following, quoting or referring to rules of grammar in support of your answers:— 12

- (a) हरिं दृष्टति ।
(b) भार्यामौष्यति ।
(c) प्रसिद्धीव्यति ।
(d) मिष्टान्नमिदं मां न रोचते ।
(e) पीठानुत्तिष्ठते ।
(f) मुक्तावुत्तिष्ठति ।
(g) महाजनमनुकुर्वते ।
(h) गां वृक्षते पयः ।

Translate into Sanskrit :

1

A rich man's son inherits lands,
And piles of brick and stone and gold ;
And he inherits soft white hands,
And tender flesh that fears the cold :
A heritage, it seems to me,
One scarce would wish to hold in fee.¹

What doth the poor man's son inherit ?
Stout muscles and sinowy heart ;
A hardy frame, a hardier spirit ;
King of two hands he does his part
In every useful toil or art :
A heritage, it seems to me,
A king might wish to hold in fee.

¹ To hold in permanent possession, as a piece of land.

SANSKRIT.

FOURTH HONOUR PAPER.

Examiner—MAHAMAHOPADHYAY HARAPRASAD SASTRI, M.A.

The figures in the margin indicate full marks.

1. Explain the *sūtra* लः कर्णाणि च भावे चाकर्मकेभ्यः What 20
is the significance of the first च ? What is a ल ? How many ल's
are there in the classical as distinguished from the Vedic Sanskrit ?
Name them. What are the लादेशाः ? Give some of the processes by
which these primary लादेशाः are changed into 180 *vibhaktis* of the
later grammarians.

2. Explain the following *kārikā*, and state the *sūtras* on which it is 15
based. Show that it covers all the ground covered by those *sūtras* :

अजन्तोऽकारवान् वा यस्ताश्च निट् थलि वेदयसु ।

अदन्त ईदृङ् नित्यानिट् क्रादृङ् लोटि खेङ् भवेत् ॥

3. Explain the following extract : 12

असिद्धवदनाभात् । इत ऊर्ध्वम् आपादसमाप्तेराभीयम् ।

How does Varadarāja get आपादसमाप्तेः from the *sūtra* ? What
is the significance of अभीयम् ? Illustrate by examples. What is the
meaning of असिद्ध ?

4. Give five examples in which *ātmanepadī* roots become *paras-*
maipadī in special *lakāras*, quoting your authority in each case.

5. Show that Grimm's Law is not an instance of the working of the principle either of Phonetic decay or of Dialectic regeneration. What would be the changes which an initial φ or χ in Sanskrit would undergo in the various languages which come within the purview of this Law ? 8

6. Explain the extract प्रातिपदिकादालर्थे बहुवचनस्य, giving the technical meaning of each of the words contained in it. Give in full detail the effects of the use of बहुवचन, illustrating each effect by examples. 15

7. Give the forms of छ, पच, छ, कु, दन, and गन in the third person singular in *lṛīṭ*, quoting the special *sūtras* in each case. 8

8. Give the following forms, quoting appropriate *sūtras* in each case : 15

The third person singular of दृश् and जन् in *luṇ*;

The third person singular of भक्ष् in *luṇ*, as well as in *lot*.

The third person singular of ह्या and ह्या + विच in *luṇ*.

The third person singular of वक्ष् in *lan* and *luṇ*.

The third person singular of क्षा in *luṇ*, the second person singular in *lot*.

ARABIC.

FIRST HONOUR "PAPER.

Paper-Setters— $\left\{ \begin{array}{l} \text{HARINATH DE, ESQ., M.A. (Cal. and Cantab.),} \\ \text{M.R.A.S.} \\ \text{MAULAVI ABU NASR MAHAMED WAHID, M.A.} \\ \text{R. F. AZOO, ESQ.} \end{array} \right.$

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.),
M.R.A.S.

The figures in the margin indicate full marks.

1. Translate into English, adding explanatory notes where necessary :—

A.

8

(وقال حسيل بن سجين الفبي)
لقد علم العبي المصمغ انني
غداة لقينا بالشريف الاحامسا

جعلت لبان الجون للقوم غاية
 من الطعن حتى أض احمر وارسا
 وارهبت اولى القوم حتى قذفوها
 كما ذلت يوم الورد هيماء خوامسا
 بمطرد لندن صحاح كعوبه
 وذني رونق غضب يقدر القوانسا
 وبيضاء من نسج ابن داود نثرة
 تخيرتها يوم اللقاء الملبسا
 وحرمية مفسوة وسلاح
 خفاف ترى عن حدها السم قالسا
 فما زلت حتى جنني الليل عنهم
 اطرف عني فارسا ثم فارسا
 ولا يعمد القوم الكرام اخاهم العتيب
 د السلاح عنهم ان يمارسا

B.

(وقال الاهرج المعني)

انا ابو برزة اذ جد الوهل
 خلقت غير زمل ولا وكل
 ذا قوة وذا شباب مقتبل
 لا جزع اليوم على قرب الاجل
 الموت احلى عفدنا من العسل
 نحن بني ضبة اصحاب الجميل
 نحن بنو الموت اذا الموت نزل
 نفعى ابن عفان باطراف الاسل
 ردوا علينا شيخنا ثم بعجل

C.

5

(وقال جزء بن كليب الفقعي)

تبغى ابن كوز والسفاهة كاسمها
ليستاد ماذا ان شبتونا لياليا
فما اكبر الاشياء عندي حرازة
بان ابت مزريا عليك وزاريا
وانا على عرض الزمان الذي ترى
نعالج من كره المخازي الدواهيها
فلا تطلبنها يا ابن كوز فانه
غذا الناس مذ قام الذبي الجواريا
فان التي حدثتها في انوفنا
واعاذتنا من الالباء كما هيها

2. (a) Narrate briefly in Arabic the incident connected with extract A. 3

(b) What is meant by المنسوب بنزع الخافض Give an illustration from extract A. 1

(c) Explain the formation of ذدت - زلت - احلى - مطرد - ليستاد 6
Why is بلقي in (بني ضبة) - منصوب (بني ضبة) ?

(d) Parse فداة and بيضاء. Why is بيضاء feminine in gender ? 7
Refer it to its root, and give its primary meanings. Give the meanings of (i) ابيضت وجوههم ; (ii) ابيضت عيناه ; (iii) بيبض المفارق ; and (iv) بيبض الله وجهك (في دعاء العجوز على الحجاج)

(e) How do you account for the expression من نسج ابن داود in extract A ? Compare it with a similar expression in the poem of حصين بن الحكم المري given in your text :— 2

صفائهم بصري اخلاصتها قيورها
ومطردا من نسج داود مبهما

(f) Relate fully the event referred to in extract B.

46

3. Explain in your own Arabic :—

(و قال المتلمس) .

الم تر ان المرء رهـن منية
صريعا لعاني الطير او سوف يرمس
فلا تقبلن ضيما مخافة ميئة
وموتن بها حرا وجلدك املس
فمن طلب الاوطار ما حز انفه
قصير وخاض الموت بالسيف بيـس
نعامة لما صرع القوم رهطه
تبدن في اثوابه كيف يلبس
وما الناس الا ما رأوا وتحدثوا
وما العجز الا ان يضاموا فيجلسوا
الم تر ان الجون اصدم راسيا
تطيف به الايام ما يتايس
عصى تبعها ايام اهلكت القرى
يطان عليه بالصفيم ويكلس
هلم اليها قد ائيد رت زروعها
وعادت عليه المنجد ون تكـس
وذاك اوان العرض هي ذبابه
زبابيرة والازرق المتلمس

4. (a) Analyse the second bait. How does the change in the vowel-^{نقطة} point of ميم in مينة affect the meaning ? State the general rule.

(b) How do you account for the use of رهـن as predicate ان المرء رهـن منية 3
ان المرء رهينة منية ? Is it grammatically correct to say رهـن منية ?
Compare the line of مسور given in your text :—

ابعد الذي بالنعف نعف كوكب
ذي تراب وجندل

(c) Write in Arabic a short note on **تبع**. Explain the allusions 65
contained in lines 3, 4, and 6.

(d) Why is the poet **متلمس** so named? Account for the 4
omission of **ن** in **فيجلمروا**. State the general rule.

5. Explain in Arabic, with reference to the context :— 6

يظل بموماة ويمسي بغيرها
جعديشا ويعروري ظهور المهالك
ويسبق وفد الربيع من حيث يفتحي
بمنتخرق من شدة المتدارك
إذا حاص عينيه كرى النوم لم يزل
له كالي من قلب شيعان فاتك
ويجعل عينيه ربيضة قلبه
الى سلة من حد اخلق صائك
إذا هزة في عظم قرن تهلت
نواجذ افواه المنايا الضواحك
يري الوحشة الانس الانيس ويهتدي
بحديث اغتذت ام النجوم الشوابك

6. (a) To what class of particles do **بلى** and **نعم** belong? Explain 2
the difference in their use.

(b) Give the singular or the plural, as the case may be, of **شئى** - 3
ناقاة and **اكارع** - **عيل** - **افوا** - **امام**.

7. Translate into Arabic, giving diacritical points :— 14

(a) Permit me then to inscribe to yourself a book which, I hope, may be found a lifelong fountain of innocent and exalted pleasure; a source of animation to friends when they meet; and able to sweeten solitude itself with best society,—with the companionship of the wise and the good, with the beauty which the eye cannot see, and the music only heard in silence. If this collection proves a storehouse of delight to labour and to poverty,—if it teaches those indifferent to the poets to love them, and those who love them to love them more, the aim and the desire entertained in framing it will be fully accomplished.

(b) His poetry is singularly unequal; his short life, his frequent 7
absorption in public employment, hindered doubtless the development of his genius. His great contemporary fame has been thus obscured. At times he is heavy; his simplicity is rude and bare; his verse unmelodious. These, however, are the 'defects of his merits.'

ARABIC.

SECOND HONOUR PAPER.

Examiner—R. F. Azoo; Esq.*The figures in the margin indicate full marks*

1. Translate into English:—

16

فقال ان مرامي الغربة لفظتني الى هذه الغربة وانا ذو
 مجاعة وبوسى وجراب كفؤاد ام موسى فذهبت حين
 سجا الدجى على ما بي من الوجى لارتاد مضيفا او اقتاد رغيفا
 فساقني حادي السغب والقضاء المكنى ابا العجب الى ان
 وقفت على باب دار فقلت على بدار

حييتم يا اهل هذا المنزل
 وعشتم في خفض عيش خضل
 ما عندكم لابن سبيل مومل
 نضو سرى خابط ليل ليل
جوي الكشى على الطوى مشتمل
 ما ذاق مهذ يومان طعم ماكل
 ولا له في ارضكم من مؤمل
 وقد دجا جفم الظلام المسبل
 وهو من الحيرة في تململ
 فهل بهذا الربع عذب المنهل
 يقول لي الق عصاك وادخل
 وابشر ببشر وقرى معجل

قل فبرز الي جوذر عليه شوذر وقال

وحرمة الشيخ الذي سن القرى
 واسس المعجوج في ام القرى

ما عندنا لطارق اذا عرى
 سوى الحديد والمناخ فى الذرى
 وكيف يقري من نفى عنه الكرى
 طوى برى اعظمه لما انبرى
 فما ترى فيما ذكرت ما ترى
 فقلت ما اصنع بمنزل قفر ومنزل حلف فقر

2. (a) Give the roots and primary meanings of the words underlined in the above extract, and describe their grammatical forms. 6

(b) Explain the allusions in the phrases كفؤاد ام موسى 3
وحرمه الشيخ الذي من القرى واسس المحجوج في ام القرى and 3

(c) Give the derivation of the word مذ ; and say with what case, 3
 or cases, it is construed, illustrating your answer by examples.

(d) Define the rhetorical figure in جنى الظلام المسبل and fully 3
 explain the meaning of اللق مصاك.

3. Translate into English :—

12

نفضضتها فعل المتملس من مثل صحيفة المتملس فاذا
 فيها مكتوب :—

قل لوال غادرت به بعد بيني
 ناد ما ساد ما بعض اليدي من
 الشيم ماله وفتاة
 لبه فاصطلى لظى حسرين
 حاد بالعدن حين اعمه هواة
 عينه فانثنى دلاء بين
 خفض الكزن يا معنى فما يجـ
 دي طلاب الاثار من بعد عين
 ولكى جل ما عراك كما جـ
 ل لدى المسلمين رزء العسيين
 فقد اعتضت مذكه فهما وحزما
 والبليب الاريد ينبغي ذين

فأص من بعدها المطامع وأعلم
 أن صيد الظباء ليس بهين
 لا ولا كبل طائر يلج الفـ
 مخ ولو كان مهكدقا باللجين
 ولكم من سعى ليصطاد فاصطيد
 د ولم يلق غير خفي حنين
 فتبصر ولا تشم كبل برق
 رب برق فيه صواعق حين
 واغضض الطرف تسترح من غرام
 تكتسب فيه ثوب ذل وشين
 فبلاء الفتى اتباع هوى الدفـ
 س وبذر الهوى طمـوح العين
 قال الراوي فمزقت رقعته شذر مذر ولم ابل اعذل ام عذر

4. (a) Give the story, in Arabic, of صحيفة المتلمس, and explain, 8
 also in Arabic, the origin of the proverb رجع بخفي حنين.
 (b) Explain the grammatical construction of شذر مذر, and give 4
 the root-meanings of the words. Account for the form لم ابل.
 (c) Of what بحر are the verses in this extract? Scan any one 3
 of them, and say if the ضرب is the same throughout.
 5. Translate into English :— 6

ومن حكم بان ابدل وتخزن وألين وتخشن واذرب وتجد
 واذكو وتخدم لا والله بل نتوازن في المقال ونكافى في
 الفعال حذر الفعال حتى ذأمن التغابن ونكفى التضامن والا
 فلم اعلمك وتعلمني واقلمك وتستقلني واجترح لك وتجرحني
 واسرح اليك وتسرحني وكيف يجتلب انصاف بضم واني
 تشرق شمس مع غيم ومتى اصعب ود بعسف واي حر رضي
 بخطة خـ

6. (a) What do you understand by استقھام انكاري ? Give instances 2
from the above extract.

(b) What is the difference in meaning between فَعَال and فُعَال 2

(c) Explain, in Arabic, the application of the proverb—حَذَرِ النَعْلِ 2
بالنعل

7. Translate into English :—

19

وكان يشبه المتلون بابي براقش وابي قلمون فابو براقش طائر
منقط بالوان النقوش يتلون في اليوم الواو وابو قلمون ضرب من
ثياب الحرير يذسج بالروم يلقون الواو ويقال للمطائش الذي لا
ثبات معه ابو رياح تشبيها بتمثال فارس من نحاس بمدينة
حمص على عمود حديد فوق قبة بباب الجامع يدور مع الريح
ويمتاز بمدودة واصابعها مضمومة الا السبابة فاذا اشكل عليهم مهبط
الريح عرفوه به فانه يدور باضعف نسيم يصيبه والذي يعمله
الصبيان من قرطاس على قصبة يسمى ابا رياح ايضا ويقال
اخلاق الملوك مثل في التلون قال بعضهم

ويوم كاخلاق الملوك تلونا
نصحو وتغييم وطل وابل
اشبهه اباك يا من صفاته
دنوراءراض ومنفج ونائل

8. Translate into Arabic :—

20

The same hospitality which was practised by Abraham, and celebrated by Homer, is still renewed in the camps of the Arabs. The ferocious Bedouins, the terror of the desert, embrace without inquiry or hesitation the stranger who dares to confide in their honour and enter their tent. His treatment is kind and respectful : he shares the wealth or the poverty of his host ; and after a needful repose he is dismissed on his way with thanks, with blessings, and perhaps with gifts. The heart and hand are more largely expanded by the wants of a brother or a friend ; but the heroic acts that could deserve the public applause must have surpassed the narrow measure of discretion and experience. A dispute had arisen who among the citizens of Mecca was entitled to the prize of generosity ; and a successive application was made to the three who were deemed most worthy of the trial. Abdallah the son of Abbas had undertaken a distant journey, and his foot was in the stirrup, when he heard the voice of a suppliant, ' O son of the uncle of the Apostle of God, I am a traveller

and in distress !' He instantly dismounted to present the pilgrim with his steed, her rich caparison, and a purse of four thousand pieces of gold ; excepting only the sword, either for its intrinsic value, or as the gift of an honoured kinsman.

ARABIC.

•THIRD HONOUR PAPER.

Examiner—R. F. AZOO, ESQ.

The figures in the margin indicate full marks.

1. Translate into English, explaining all the allusions :—

11

A.

فقلت خالوا سبيلي لا ابا لكم
فكل ما قدر الرحمن مفعول
كل ابن انثى وان طالت سلامته
يومما على الة حدباء محمول

B.

لقد اقوم مقاما لو يقوم به
ارى واسمع ما لو يسمع الفيل
لظل يرعد الا ان يكون له
من الرسول باذن الله تنويل
حتى وضعت يميني لا انازع
فى. كف ذى نجمات قبيله القيل
لذاك اهيب عندي اذ اكلمه
وقيل انك منسوب و مسؤل
من خادر من ليوث الاسد مسكنه
ببطن عثر غيل دونه غيل
يغدو فيلحم ضرغامين عيشهما
لحم من القوم معفور خراويل

إذا يساور قـرنا لا يحـل له
 أن يترك القرن إلا وهو مفـلول
 منه تظل سباع الجـوضا مزنة
 ولا تمشى بواديـه الأراجيل
 ولا يـزال بواديـه أخو ثقة
 مطـرح البز والدرسان مأـكول

2. (a) Give the history of the composition of قصيدة بانـت سعاد . 6
 Discuss its claim to be called القصيدة البـردة . Give a short account of
 the life of its author.

(b) Give the full significance of لا إيا لكم . Give the force of 3
 لقد نـلام . How do you justify the إضافة of ليوث with اسد ?

(c) What is meant by تنازع الفعلين ? State the rule. (Give 3
 an example from the above verses.

(d) Refer the above to their metrical standard, and scan the 3
 eighth line in extract B.

(e) What is غير منصـوف ? Enumerate all the words occurring as 4
 غير منصـوف in the above verses. State your reasons.

3. Explain in your own Arabic :— 6

(a) تنفي الرياح القذى عنه وافرطه
 من صوب سارية يفيض يعاليل
 (b) كانت مواعيد عرقوب لها مثلا
 وما مواعيد الا الاباطيل
 (c) ترمي الغيوب بعيني مفرد لهق
 إذا توقدت العوزان والميل

4. Who was عرقوب ? Why has his name become proverbial ? 2

5. Translate into English :— 16

واني لنجوم يهتدي صحبتي به
 إذا حال من دون النجوم سحاب
 غني عن الاوطان لا يستغـزني
 الى بلد سافرت عنه اياب

* وعن ذملان العيس أن سامحت به
والا ففي الكوارهن عقاب
* واصدي فلا ابدي الى الماء حاجة
وللشمس فوق اليعملات لعاب
وللسر مني موضع لا يناله
نديم ولا يفضي اليه شراب
* وغير فؤادي للغواني رمية
وغير بذاني للبرخياخ ركاب
تركنا لاطراف القنا كل شهوة
فليس لنا الا بهن لعاب
* نصرفه للطعن فوق حوادر
قد انقصفت فيهن منه كعاب
اعز مكان في الدنى ظهر سابح
وخير جليس في الزمان كتاب
وبحر ابو المسك الخضم الذي له
على كل بحر زخرة وعباب
تجاوز قدر المدح حتى كانه
باحسن ما يثنى عليه يعاب
وغالبه الاعداء ثم عفوا له
كما غالبت بيض السيوف رقاب
* واكثر ما تلقى ابا المسك بذلة
اذا لم يصن الا الحديد ثياب
* ووسع ما تلقاه صدرا وخلفه
رماء وطعن والامام ضراب
وانفذ ما تلقاه حكما اذا قضى
قضاء ملوك الارض منه غضاب

يقود اليه طاعة الناس فضله
ولو لم يقدها نائل وعقاب

6. Annotate on the lines marked by an asterisk. Give the different readings of the sixth and eighth lines, and discuss their merits. 10

7. Translate into English :-

12

تخوفني دون؛ الذي امرت به
ولم تدر ان العار شر العواقب
ولابد من يوم اغر محجل
يطبول استماعي بعده للفوائد
يهون على مثلي اذا رام حاجة
وقوع العوالي دونها والقواضب
كثير حياة المرء مثل قليلها
يزول وباقي عيشه مثل ذاهب
اليك فاني لست ممن اذا اتقى
عضاض الافاعي نام فوق العقارب
اتاني وعيند الادعياء وانهم
اعدوا لي السودان في كفر عاقب
ولو صدقوا في جدهم لحدرتهم
فهل في وحدي قولهم غير كاذب
الي لعمري قصد كل عجيبة
كاني عجيب في عيون العجائب
باي بلاد لم اجر ذوائبي
واي مكان لم تطأه ركائب
كان رحيلي كان من كف طاهر
فأثبت كوري في ظهور المواهب
فلم يبق خلق لم يردن فناءه
وهن له شرب وزود المشارب

فتى علمته نفسه وجدوده
قراع الاعادي وابتذال الرغائب

3. (a) Write notes on the first two lines in the above extract, using as much as possible the language of commentators. 4

(b) What part of speech is إِلَيْكَ in the fifth line? Parse— 2

فلم يبق خلق لم يردن. فذاء
وهن له شرب ورود المشارب

(c) Write a short sketch, in Arabic, of the life of the author. 3

9. Translate into Arabic:—

(a) The truest words spoken by any poet are those of Labeed, who said, 'Know that everything is vanity except God.' 3

(b) Meekness and shame are two branches of faith, and vain talking and embellishing are two branches of hypocrisy. 3

(c) The calamity of knowledge is forgetfulness, and to lose knowledge is this, to speak of it to the unworthy. 3

(d) Whoso pursueth the road of knowledge, God will direct him to the road of Paradise; and verily the angels spread their arms to receive him who seeketh after knowledge; and everything in heaven and earth will ask grace for him; and verily the superiority of a learned man over a mere worshipper is like that of the full moon over all the stars. 6

ARABIC.

FOURTH HONOUR PAPER.

Examiner—HARINATH DE, Esq., M.A. (Cal. and Cantab.),
M.R.A.S.

The figures in the margin indicate full marks.

1. Translate into English:—

15

وكان اهل خراسان يظنون ان حربهم تلك عارض ينقشع
وعن قريب على الرسم في مثله يندفع فلما رأوها غماما ركاما
وشاهدوها غماما ولزاما اقبلوا عليها مضطربين فاذا الامراد
والخطب جد و العدد حديد و البأس شديد وبرز الديلم من وراء
الخندق الى العراء مخرجين من جهد البلا و ضللك البؤس
واللاواء فاستعمرت وقدة الحرب ودارت رحى الطعن والضرب
وتحدث الناس بان مؤيد الدولة قد خبب فائقا واضرابه بمال حلمه

اليهم سرا واطمعهم في امثاله حيلة ومكرا وواطأهم على التساهل في الحرب لليوم المرقوب والاجل المضروب فلما حمل عسكر الديلم من تعبيتهم ولوا اولئك ادبارهم نفورا وثبت بينهم حسام الدولة تاش وفخر الدولة في القاب يتضاربان بالسيوف والقرانكينيات ويردان العملات بالمتداركات بصدق النيات في الثبات الى ان القت ذكاء يميزها في كافر وقد انهزمت الجيوش وتفرقت تلك الجموع فانقلب اذ ذاك يريد المعسكر فساخت قوائم الفيل الذي كان حصن القلب في بعض تلك المخاضات واعجله حر الامر عن التوقف لازعاجه واخرجه فتركه على حاله ونجا براسه وترك المعسكر شاغرا بما فيه من الاموال المعكمة والاسلحة المنضدة والغلمان العصارية والغلات المجموعة ومضى على حاله الى ان عارذ نيشابور ودخلها ليلا *

2. (a) Parse and وراوها غماما وكاما 'عارض ينقشع

(b) Explain fully the meaning of القت ذكاء يميزها في كافر, and name the rhetorical figure. What kind of words are ذكاء and كافر ?

(c) Give the meaning and etymology of القرانكينيات and العصارية

3. Translate into English :—

ثم انه من المعلوم ان الكتاب الجامع الاوامر الالهية والالة الموضوعية المتعامل بالسوية انما يحفظ على اتباعهما ويضطر العالم الى التزام احكامهما بالسيف الذي هو حجة الله تعالى على من جحد وعذد ونزع عن صفقة الجماعة اليد وهو بارق سبطوته وشهاب نغمته وجذوة عقابه و عذبة غلابه فهذا السيف هو الحديد الذي وصفه الله تعالى بالبأس الشديد فجمع بالقرنل الوجيز معاني كثيرة الشعوب متدانية الجذوب محكمة المطاع مقومة المبادى والمقاطع وظهر بهذا التاويل معنى الاية وبان ان السلطان خليفة الله على خلقه وامينه على رعاية حقه بما قلده من سيفه ومكن له في ارضه واحق الولاة بان يكون شريفاً نبيها وعند الله

5

4

12

عز وجل كريما وجيها من كانت عنايته بنصرة الدين وحماية بيضة
الاسلام والمسلمين اوفر واوفى ومجاهدته لاعداء الله المارقين
عن شرائعه الماردين دون حدوده وفرائضه بنفسه وماله ورهطه
ورجاله اشرح للصذور واشفى *

4. (a) Explain, in Arabic, the connexion which Al-'Utbī tries to establish between **المؤمنين**, **الكتاب**, and **الحديد**. 8
(b) What do you understand by **بيضة الاسلام والمسلمين**. 2
(c) Explain the meaning of **اليد** **لجماعة** **اليد**. 2
(d) What kind of **جاس** is there between **اوفر** and **اوفى**? 2
5. Translate into English :— 4

فما السموئل عهدا والخليل قري
ولا ابن سعدى ندى والشفقى غلبا
من الامير بمعشار اذا اقتسموا
مآثر المعجد فيما اسلفوا نهبا
ولا ابن حجر ولا ذبيان يعشروني
والمازني ولا القيسي مقتدبا
هذا لركبته او ذا لرهبته
او ذا لرغبته او ذا لطربا

6. Explain all the allusions in the foregoing lines, giving short biographical notes on the persons mentioned therein. 8
7. Translate into English :— 8

وفي سنة عشرين ومائتين تحول المعتصم من بغداد وبنى
سمر من رأى وذلك انه اعتنى باقتناء الترك فبعث الى سمرقند
وفرغانة والغواحي في شرائهم وبذل فيهم الاموال والبسم انواع
الديباج ومناطق الذهب فكانوا يطردون خيلهم في بغداد
ويؤذون الناس وضلقت بهم البلاد فاجتمع اليه اهل بغداد وقالوا
ان لم تخرج عنا بجندك حاربناك قال وكيف تحاربوني قالوا
بسهم الاسكار قال لا طاقة لي بذلك وكان ذلك سبب بنائه
سمر من رأى وتحولوا اليها .

8. Explain the meaning of سهام الاستحار .

2

9. Translate into Arabic :—

25

Herdsmen by profession, it is from their herds that the Bedouins derive their principal means of subsistence. Their trade is in camels, and in sheep when they have them, besides a little in the horse-dealing line, especially to the North. In requital for flesh and wool, they obtain the scanty articles of dress, food, and furniture which their mode of life requires: these are not multifarious; in fact, a better exemplification of the poet's 'man wants but little here below' can hardly be imagined. The chase of gazelles and ostriches furnishes them with supplementary occupation and profit, while the desert itself, untilled by hand of man, offers to their vagabond idleness the scanty harvests described a little further back. Plunder, too, whether of travellers or of villagers, makes another subsidiary resource, but this is a luxury rarely obtainable within the Arab territory itself, though of frequent occurrence in the dominions of Constantinopolitan allegiance.

PERSIAN.

FIRST PASS PAPER.

Paper-setters— { LT.-COL. D. C. PHILLOTT, I.A.
DR. E. DENISON-ROSS, PH.D.
MAULAVI ZAHADUR RAHIM ZAHID, M.A., B.L.

Examiner—MAULAVI ZAHADUR RAHIM ZAHID, M.A., B.L.

The figures in the margin indicate full marks.

1. Translate into English :—

15

چون بشفید گفتارهای درشت
سر پر دلان زود بنمود پشت
نهان کرد از روی و چیزی نگفت
عجب ماند از ان گفتهای. نهفت
ز بالا زدش تند یک پشت دست
بیگفتش آمد بجای فشت
بسه گرد اندیشههای دراز
زهر گونه کرد پیکار ساز
به بست از پی کینه آنگه کمر
نهاد از سر سروری تاج زر

بهوشید خفتان و بر سر نهاد
 یکی ترک رومی بکردار باد
 گرفتش سنان و کمان و کماند
 گران گرز را پهلوی دیویند
 ز تندی بجوش آمدش خون و رگ
 نشست از بر باره قیـز تگ
 به آوردگه رفت چون پیل مست
 چو کوه روان اسپش از جا بجست
 برون آمد و رای نآورد کرد
 بر آورد بر چهره ماه گرد

2. Explain in Persian, clearing the metaphors :—

دو برگ گلش سوسن می سرشت
 دو شمشاد عنبر فروش از بهشت
 بذاگوش تابنده خورشید وار
 فروهشته زو حلقه گوشوار
 لبان از طبرزد زبان از شکر
 دهانش مکرل بدر و گهر
 ستاره نهان کرده زیر عقیق
 تو گفتی مرا زهره آمد رفیق

3. Write a short note in Persian on the metaphysical idea conveyed by the following couplets :—

سنگاره خوانمش از دادگر
 هنرمند گویمش از بی هنر
 اگر مرگه داد ست بیداد چیست
 ز داد این همه بانگ و فریاد چیست
 درین جای رفتن نه جای درنگ
 بر اسب قضاگر کشد مرگ تگ

چندان دان که داد ست بیداد نیست
چو داد آمدش بانگ و فریاد چیست

1. (a) Explain in English:—

20

سپیده دم چو صبا میزد بهار دهد
دم هوا مدد نافه تار دهد
دل مرا که فراموش کرد عهد وصال
نسیم باد صبا بوی زلف یار دهد
ز آب دیده بموجی در اوفتم که بجهد
خیال را سوی بالین من گذار دهد
ز دست ناخوشی آنکس رها ندیم کاندیم
بدست من می صافی و خوشگوار دهد
کنون چو سرو سہی هر کجا که آزادیست
عنان لہو و طرب سوی جویبار دهد
بمهر غزار نگہ کن گہ ہر دمش گوئی
زمانہ خلعت دیبای سبز کار دهد
ہم از کرامت مرغیان صبح خیز بود
کہ خضر حلقہ اخضر بمهر غزار دهد
مرا شگوفہ خوش آید کز ابتدای بہار
زمانہ را بنوی زینت و نگار دهد
شگوفہ را نبود برگ آن کہ ہر سر شاخ
قرار گرد تا گل ز غنچہ بار دهد
سحاب را ز برای نثار موکب گل
چہان ز گفتہ من در شاہوار دهد

(b) Notice the صنعت in the seventh and ninth verses. What is the مناسبت between خضر and مرغزار?

(c) Name the metre and scan any one of the above lines.

3

5. Explain the astronomical allusions in the following verses :— 4

ولن قطب معدلت که سپهر و ستاره را
همواره گرد مرکز حکمش بود مدار
پیش از طلوع کوكب عدل تو آسمان
هرگز یمین منطقه نشاخت از یسار

6. (a) Define حرف ربط. What are the words joined by a حرف ربط called according to Persian grammar ? 4

- (b) Note the difference in the use of هست and است, and بود and باشه. 4

7. Enumerate, with examples, the various significations of چه. 8

8. Write a synopsis in Persian, in about twenty lines, of the story of جنگ سهراب و رستم, from the birth to the death of Suhrab, as related in the text, quoting a few verses by way of illustrating your answer. 20

PERSIAN.

SECOND PASS PAPER.

Examiner—SHAMS-UL-ULAMA AHMAD.

The figures in the margin indicate full marks.

1. Translate into English :—

15

لله الحمد که بپس تعلیماتش در پیرانه سری بفرقیات جوانی
می نازم و با شهسواران این فن عنان بر عنان می تازم - و چه
ترقی ازین زیاده خواهد بود که آفتاب تربیتش پرتو عاطفت
انداخته خفائی را ظهوری ساخته - و در نخل پیدائی گلزار ابراهیم
انبار ملک الکلامیست که بپدیدل و انبار است - و فرعش زانو
بزانوی اصل و سحرش دوش بدوش اعجاز - آری زور شنآوری
قطره ببازوی موج دریاست و روشنائی ذره بهرتو خورشید جهان آرا -
بارجود شغل ملک گیری و رعایت احوال رعایا و لشکری بار
جکت گروهی یعنی استادی عالم بر گردن گرفتن و زحمت

تربیت شاگردان کشیدن غرض التفات و مرحمت است هم بخلق و روزگار و هم بآداب استعداد که قابلیت آنها ضائع نماند و اینها بحظ وافی بهره‌مند گردند - تا شفقت و عطوفت را این پایه نباشد به تخت بادشاهی بر آمدن دست ندهد و تا در ترحم و مهربانی دریا نشوند گوهر دارائی و فرمان روائی بکف نیفتد - تفوق بادشاهان بمهربانی و شفقت است نه بعرض و طول مملکت - مصراع - شهنشه تر هرانکو مهربان تر - مرحمتش بر رخ، هر که خندید دیگر گریه بر رخس بساط اشک نچید طفلیکه سر انگشت مهربانیش مکید لبش گزنده پستان مادر نگردید *

2. (a) Give the Persian grammatical terms for the **ي** in the following words :— 3

بازوی شاه - ظهوری - طفلیکه - مهربانی شناوری - حقانی

(b) Give the various plurals and significations of the word or words 3
In how many ways can **معجز** be pointed ?

3. Give a few examples of common interjections expressive of joy and admiration or praise. 5

4. Give a free rendering, in very simple Persian, of the following passage :— 15

در چهاردهم شوال در هنگامیکه خطه دلکشی شیراز مقر کوکبه ظفر طراز بود خسرو فلک اورنگ یعنی مهر منوچهر بایوان حمل خرامیده بر تخت جم سپهر بر آمد - کوکبه سلطان باز بعزم جهانگیری نهضت نمود - طفل فنچه از مشیمه گلبن قدم بعوضه ظهور گذاشته در مهد بستان از پستان دایه ابر بهاری شیر نوشین نوشید - و برید صبا فرگس شها را ازین مژده چشم روشنی گفت - فساد پیشگان دی که رخنه باغ بودند بحکم قهرمان قضا از بندر هستی قلع گشتند و خاقان گیتی سنان قوای ربیعی بعزم داغستان لا له و شقایق یکران سبک خیز صبا و شمال را جولان داده و قلعه شماخی قلل شامخه را که ارام گاه جنود

تطاول شباط بود بهجوم جفود خورداد مسخر ساخته - و اشکر
 بهمین را از عرصه ملک چمن بر انداخت - جشن نوروزی ترتیب
 یافته هر یک از سواران سپاه و امیران لشکر بخلاص زر تازی آراسته
 پیکرو از شمشیر لباس و خفدان زربفت پوش با آفتاب
 همدوش و همسر شدند *

5. Name and explain the rhetorical figures that occur in Question 4. 5

6. (a) To what Calendars do the following belong:—شباط. 2
 خورداد. Name the English months that correspond to them. بهمین

(b) Give the separate significations of each member of the compound in the following compound words:— 3

زربفت - گنجور - نوشین - گبلن - منوچهر - دلکشا

(c) Write a short note in Persian on the جشن نوروزی. Give 5
 the corresponding English date of this festival.

7. (a) Give the singular or plural and the primary meaning of:— 4
 لؤلؤ and مطایا - عواقب - عدل - عوارض - مقدر - مواد - سلطان

(b) Give the measures and meanings of:— 4

ننازع - مسلم - نماض - استخلاص

8. Translate into English:—

15

حلالی ستایش و سپاس که در رشته تهلیل منعقد و منسلک
 آید سزاوار پیشگاه مقدریست که دست قدرت بيمثالش در مواد
 اعداد صوری با همه تدابیر و دوری چندان خاصیت اتحاد
 نهاده که از آمیزش آتش و آب و امتزاج باد و خاک خلقی
 لطیف چون پیکر شریف انسانی صفت قوام پذیرد - و بتعلق
 نفس و بدن تا غایت اختلاف از اثر اینلاف مسجود ملک
 و مقصود فلک گردد - و درود مسبحان افلاک بر روان پاک رسل
 و انبیا و خلف و اوصیا که شارع ملک باطن و ظاهر و مخبر ربط
 قدیم و جدید و مظهر فرق شقی و سعید اند - و بعد هدایای
 دعائیکه از بسیط خاک تحمل مطایای افلاک بمنزله استعجاب

و موقوف اجابت شد بعد - و اذکار ثنائیکه در ادوار انجم سرودش
موقع تذکار و مورد قبول یابد - نثار پیشگاه حضور بادشاه فلک
دستگاه انجم سپاه عدل اندوز ظلم سوز سلطان معظم برادر مکرم
امیر اطور اعظم ساخته مکشوف رأی ملک ارا که گنجور عقود
موالفت و دستور قواعد مصادقت و مفسر آیات یکجتهی
است میداریم *

9. Translate into Persian :—

20

So they took the arrows of chance, and held them loosely in their hands with the points to the flame. Then the point of one arrow slowly turned round and pointed out Abdaldar, the master of the magic ring. Now in the ring was set a jewel made of dew frozen before the beginning of the world, and hidden in the bowels of the earth under the weight of great Caucasus. Then by his spells Abdaldar caused a spark from the flame of the boy's life to enter the stone in the ring, knowing that when he should put his hand on the boy, the spark, being a part of his life, would join itself to that to which it belonged, and that thus he would be able to recognize the unknown enemy Thalaba the Destroyer.

Then said Kehama to Kailyal, 'It is idle to seek escape from the decrees of Fate. Thou hast fled to Yemen, and behold! I am here. We two are destined to share alike the amreeta cup of immortality, come, share, too, my throne willingly.' 'It cannot be,' said she, 'mighty thou art, but the heart and will of man are still free.' Then the marble sepulchre opened wide, and disclosed a skeleton within holding the cup of immortality in his hand.

PERSIAN.

FIRST HONOUR PAPER.

Examiner—SHAMS-UL-ULAMA AHMAD.

The figures in the margin indicate full marks.

1. (a) Translate into English :—

ز مطرب که دل خوش بادوی را
نام ناله جان سوزنی را
چنان در جان من سوزش اثر کرد
که بی رقت ندیدم هیچ شی را

حریفی بد مرا ساقی که هر دم
 ز زلف و رخ نمودی شمس و دی را
 چو شوتم دید در ساغر می افزود
 بگفتم ساقی فرخنده پی را
 رهانیدی مرا از شر هستی
 چو پیمودی پیایی جام می را
 حماک الله عن شر النوائب
 جزاک الله فی المادرن. خیوا
 چو بیدخود گشت حافظ کی شمارد
 بیک جو ملکت کاؤس و کی را

(b) Give the original meaning of حریف. What are its secondary meanings? 3

(c) Note the صنعت in the third بیت. What is it technically called? 2

(d) Who was کارس. Give a brief account of the dynasty to which he belonged. 4

2. (a) Render into English, making the sense of each line clear:— 9

شگفته شد گل حمرا و گشت بابل مست
 صلی مر خوشی ای عاشقان باده پرست
 اساس توبه که در محکمی چو سنگ نمود
 ببین که جام زجاجی چگونه اش بشکست
 بیار باده که در بارگاه استغنا
 چه پاسبان و چه سلطان و چه هوشیار و چه مست
 ازین رباط دو در چون ضرورتست رحیل
 رواق طاق معیشت چه سر بلند و چه پست
 مقام عیش میسر نمی شود بی رنج
 بلی بحکم بلا بسته اند روز الست
 به هست و نیست مرنجان ضمیر و خوش میباش
 که نیستت سر انجام هر کمال که هست

شکوه آصفی و اسب باد و منطق طیر
 بباد رفت و از آن خواجه هیچ طرف نداشت
 ببال و پر مرو از ره کبه تیر پرتابی
 هوا گرفت زمانی وای بخاک نشست
 زبان کلک تر حافظ چه شکر آن گوید
 که تحفه سخنش میبند دست بدست

(b) What do you mean by سرخوش? What are the different 3
 degrees of مستی in Persian called?

(c) Comment on روز الست. Give the 'full allusion, quoting the 3
 holy verse to which it refers.

3. Explain in Persian, avoiding the wording of the text as much 16
 as possible, and noticing the Sufistic allusions:—

تا ز میخانه و می نام و نشان خواهد بود
 سر ما خاک ره پیر مغان خواهد بود
 حلقه پیر مغانم ز ازل در گوش است
 ما همانیم که بودیم و همان خواهد بود
 بر سر تربت ما چو گذری هست خواه
 که زیارتگاه رندان جهان خواهد بود
 بر زمینی که نشان کف پای تو بخود
 سالها سجده صاحب نظران خواهد بود
 برو ای زاهد خردبین که ز چشم می و تو
 راز این پرده نهانست و نهان خواهد بود
 عیب مستان مکی ای خواجه کزین کهنه رباط
 کس ندانست که رحلت بچه سان خواهد بود
 چشم آندم که ز شوق تو نهد سر بلعد
 تا دم صبح قیامت نگران خواهد بود
 بخت حافظ گر ازین گونه مدد خواهد کرد
 زلف معشوقه بدست دگران خواهد بود

4. (a) Translate into English, elucidating the metaphors :—

13

زان زلف عنبرین که بگل بر نهاده
 صد گونه داغ بر دل عنبر نهاده
 مخمور عشق را نبود چاره چو تو
 مهر عقیق: بر گل شکر نهاده
 از اشک لعل ساغر چشم لبالب است
 تو لب چرا بران لب ساغر نهاده
 خود از برای سر زره از بهر تن بود
 تو جنگجوی عادت دیگر نهاده
 در بر گرفته دل چون خود آهنین
 و آن زلف چون زره را بر سر نهاده
 سر بر نمیکنی ز تکبر مگر که پای
 بر آستان شاه شاه مظفر نهاده
 آن شاه شاهزاده که اقبال گویدش
 از فخر پای بر سر اختر نهاده
 دولت به تست زنده و ملت به تست شاد
 کین هر دو نیک لائق و در خور نهاده
 کس را فراز خویش نه بینی چو از علو
 مسند فواز قبلاً اخضر نهاده
 زان دم که دایه باز گرفت از لب تو شیر
 لب را ز مهر بر لب خنجر نهاده
 تا برد زبانه منجق سویی هوا
 تکبیر در زبان دو پیکر نهاده
 ز ناز بست خصم تو چون دید کز ظفر
 نو داغ بر جبین مه و خور نهاده
 پشت و دلت همیشه قوی باد بهر آنکه
 بنیاد ملک هر چه قوی تر نهاده

- (b) Name the metre, and scan any one of the above lines. 2
- (c) Into how many parts is a قصیده مدحیه generally divided? 8
- Name each of them, and illustrate your answer from the above ode.
5. Define اسم مکبر and enumerate, with examples, the suffixes employed to denote عظمت. 5
6. Enumerate the different significations of چه as used in Persian. Give examples. 5
7. Give the idiomatic meanings of گروهی — سر دادن when added to سر بازار — رنگ — پیمان — توبه شکستن — تن — دست 4
8. Write an essay in Persian of about twenty lines on the merits and demerits of Persian poetry as compared with English, directing your attention chiefly to the style of your composition. 16

PERSIAN.

SECOND HONOUR PAPER.

Examiner—SHAMS-UL-ULAMA AHMAD.

The figures in the margin indicate full marks.

1. (a) Translate into English :—*

14

اول بهادران بر سر نقبی که افلاطون اندیشه به افروختن
 شعله ادراک انجا نشسته بود و رصد طلوع کوكب فتح از پریدن
 آن برج بسته چون فکر منجم دويدند - اما هر چند آتش زدند
 همچو صحبت ارباب حدت طبع با بیسواد در گرفت - چه سیاه
 بختان محصور و سناره سوختگان بی نور پانصد من باروت را
 بسان خمسه ستروقه دزدیده بودند - لاجرم مانند اختر راجع از آن
 رب بر گشته مثال خیال شاعر قصد رسیدن به بیتهای بلند
 نمودند - یعنی آن دو برج از افتادن سنگها چون سکنه شعر از
 الفاظ ثقیل شکستی داشت اما بعد از آن که تقطیع بآلات حرب
 و توزین بادرات ضرب در میان آمد ظاهر شد که دخل بیجا در
 رباعی آن چار دیوار عناصر که به نکتهای سر بسته حقه و
 مضمونهای پیچیده گلوله بسته شده مشکل است - و دماغ سوزی

و حل معمای حصار که بغیر عمل تحلیل و تسهیل کشودنی نیست باطل - قافیه تنگ است و زمین سنگلاخ لا علاج - چون بند ترجیع بجای خود آمدند و ازین سبکی و کوتاهی همچو بحر مثنوی خفیف شدند - نظم قصیده فوج از گریز گاه برهم خورد و روی موکب با کمال جلد روی از مصرع رسای بان جان نبرد - و اکثر ردیف همدیگر گشتند و چون قافیه شائگان مورد اعتراض شدند *

(b) What different meanings does the word سواد bear ? 2

(c) Notice the مناسبت الفاظ in همچو بحر مثنوی خفیف شدند. 3

Give the وزن of the بحر referred to here.

(d) Explain fully— 4

قافیه شائگان عمل تحلیل و تسهیل — اخگر راجع — — — — — خمسه مسترقه

(e) What are the literal and technical meanings of— 3

بند ترجیع — زمین سنگلاخ — قافیه تنگ *

2. (a) Translate, adding explanatory notes where necessary :— 12

سبحان الله و الحمد لله و الله اكبر زهی دینداری و جند خبی
زهد شعاری که هرگاه امید می بمغلوب شدن عصات بدذات بهم
میرسد و نزدیک میشود که خس و خاشاک وجود نابود این
ملاعین بآتش قتال و فائز جدال بخاکستر جلالی مرایای خاطر
غازیان دل سوخته مبدل گردد - نظر بر حسن تدبیر که مبادا
نجهاد آخر شود و بقیه عمر بی غزا بگذرد فی الحال رای جهان
آرای ثواب طلب و صواب مطلب بمنطق اصابت ضمیر قضا
تدبیر که منظومه تعصم مراعاتها الذهن عن الخطاء فی الفكر است
شکلی بدیهه الانتاج از مقدم سرداری طفلی جنگ نادیده و
تالی کمک کردن فوجی گریز ورزیده ترتیب میدهد تا نتیجه
قضیه منعکس باشد - می توان دریافت که مطمح نظر تقدس
مظهر اگر نه این لطیفه از معجزه عجیب باشد دورها به تسلسل

نه انجامد - بر عالمیان ظاهر است که زمام تاختن بعرضه کارزار
و عذاب نظم و نسق کاروبار بکف اختیار و قبضه اقتدار هریک از
بندگان آزموده کار که عطا میفرمودند در اندک زمانی مرام به
اتمام بررسیده بود *

(b) Comment on the construction of سبحان الله. What part 2
of speech is سبحان ?

(c) To what باب does اصابت belong ? State the rule, with ex- 2
amples, according to which such words are formed.

(d) Point out all the terms of Arabic logic used in the above 3
extract, giving their English equivalents.

(e) To what language does the word کمک belong ? Give a few 2
such military terms used in Persian borrowed from that language.

'3. (a) Explain in your own Persian, noticing and elucidating the 10
metaphors :—

بالفرض و التقدير لقمه گلوگیر که همیشه از خری ریش
گارانی و پیوسته در خشم و عبوس از فقدانی اگر پیش آید -
بهمان حیل‌های باطل که مسئله ناشناسان جاهل فتوی حل
و حرمت را تابع نفس میسازند لا بالعکس بمودای و بحروفون
العلم عن مواضع سر رشته توجیه و تاویل را بحدیکه سر کیسه
بضبط در آید میکشند بر خود حلال تر از شیر مادر دهنسته به
محض وسوس شیطانی و هواجس نفسانی عمل جرمی مضمهر
بنحوی صرف خواهی کرد که الف و نون زائده غیر منصرف
نشود *

(b) What is the plain meaning, divested of metaphor, of الف و 2
نون زائده؟ غیر منصرف نشود ؟

(c) What does غیر منصرف mean, according to Arabic grammar ? 2
Quote examples.

4. Translate into English :— 8

اکنون مرده مردی را که از مخنوریش سخن کند - متاع
سخن را اگر چه مشتریان مایه دار هستند اما فکرهای خزانگیش
ازان قیمتی تر است که در جیب خرد خرده دان بیعانه اش

باشد - در شنیدن اشعار درر نثارش زبانها همه گوش است -
و در خواندن ابیات آبدارش گوشها جمله زبان - شعری را
بمناسبت شعر او اوجی رو نداده که فلک بهزار دوره یک
حضیض برایش تواند آورد - تنگی متن دقیقش باوجود
وسعت شرح بحاشیه کشادگی گفتش محتاج - اگر از رزم
مینویسد صفا از نقطه زهره خیز است - و اگر از رزم میگوید
مریم از بیم زهره ریز - روشنی تقریر در نکات بمثابة که تاریک
فهمان را جز فهمیدن عاجی نیست *

5. Explain :—

8

- (a) غزل از بیت پرکن خالی باشد
(b) یک بیت سوختن و یک بیت واسوختن نباشد
(c) فیلبند خیال شاه نگر * کرد ملک ایمن از عرای خطر
(d) چون و او سر در پدش و چون شین عرق بر جبین

6. What are the Persian grammatical terms for 'subject,' 'predicate,' 'indicative,' 'apposition,' 'verbal noun,' and 'demonstrative pronoun'? 3

7. Define — مفعول مالم—مفعول مطلق - مفعول فیه - مفعول به - 4
پسم , and give an example of each.

8. Write out the Persian sayings conveying the sense of the following :— 16

- (a) Many a little makes a mickle.
(b) One who lays snares for others falls into them himself.
(c) Mountain in labour.
(d) There is a method in his madness.
(e) Making a virtue of necessity.
(f) Do unto others as you would be done by.
(g) Love is blind.
(h) To shut the stable door after the horse is lost.

PERSIAN.

THIRD HONOUR PAPER.

Examiner—MAULAVI ZAHADUR RAHIM ZAHID, M.A., B.L.

The figures in the margin indicate full marks.

1. Translate into English :—

16

طفل با دایه نه استیزد و لیک
 گرید او گرچه نه بد داند نه فیک
 ما چو چنگیم و تو زخمه میزنی
 زاری از مانی تو زاری میکنی
 ما چو نائیم و نوا در ما ز تست
 ما چو کوهیم و صدا در ما ز تست
 ما چو شطرنجیم اندر برد و مات
 برد و مات ما ز تست ای خوش صفات
 ما که باشیم ای تو ما را جان جان
 تا که ما باشیم با تو در میان
 ما عدمهائیم و هستیهای ما
 تو وجود مطلق فانی نما
 ما همه شیران ولی شیر علم
 حمله مان از باد باشد دمبدم
 حمله مان پیدا و ناپیدا است باد
 انکه ناپیدا ست یارب کم مباد
 باد ما و بود ما از دشت تست
 هستی ما جمله از ایجاد تست
 لذت هستی نمودی نیست را
 عاشق خود کرده بودی نیست را

4. (a) Briefly describe, in Persian, the fight between Rustām and Suhrāb. 5

(b) Give the meanings of the following words from the 'Shah-Nāma': — بابزن — زبان — لش — طبرزد — خواشده — باستان — 2
دستور — یازیدن — گهن.

5. Criticise the verbs in the colloquial sentences: — 3
گمان دارم یخ می بدهد — گمان دارم یخ به بدهد — گمان دارم یخ خواهد بست

6. (a) Translate into English: —

چون بصورت بنگری چشمت دوتا ست
تو بنورش در نگر کان یکنهو است
لا جرم چون بر یکی افتد نظر
آن یکی بینوی دو ناید در نظر
نور هر دو چشم نتوان فرق کرد
چونکه در نوش نظری انداخت مرد
دو چراغ از حاضر آید در مکن
هر یکی باشد بصورت ضد آن
فرق نتوان کرد نور هر یکی
چون بنورش روی آری بیشک
گر تو صد سیب و صد آبی بشمری
صد نماید یک شود چون بفشوری
در معانی قسمت و اعداد نیست
در معانی تجزیه و افراد نیست
اتحاد یار با یاران خوش است
پای معنی گیر صورت سرکش است

(b) Give the plural of — صورت — نور — ضد. 2

(c) How is the Passive Voice formed (1) grammatically, and (2) idiomatically or colloquially? 2

7. What kind of poetical composition is مثنوی, and why is it so called? What is the difference between مثنوی and قصیده? In how many kinds of metre can the former be composed? 5

گربه پرانیدم تهران نی ز ماست
ما کمان و تیر اندازش خداست
این نه جبر این معنی جباری است
ذکر جباری برای زاری است

2. (a) Derive the word شطرنج. By what people was the game 2
invented ?

(b) Explain, in Persian, the idea, or doctrine, referred to in the 3
last line of the above extract.

3. Translate into English : -

12

چو نزدیک شهر سمنگان رسید
خبر زو بشاه و بزرگان رسید
که آمد پیاده گوجاج بخش
به نخچیر که زو رسیده است بخش
پذیره شدندش بزرگان شاه
کسی کو بسیر بر نهادی کلاه
همی گفت هر کس که این رستم است
و یا آفتاب سپیده دم است
پیاده بشد پیش او زود شاه
برو انجمن شد فراوان هپاه
بدو گفت شاه سمنگان چه بود
که یارست با تو نبود آزمود
درین شهر ما نیک خواه توایم
ستاده بفرومان راه توایم
تن و خواسته زیر فرمان تست
سیر ارجمندان و جان آن تست
چو رستم بگفتار او بنگرید
زبدها گمانیش کوتاه دید

8. (a) Translate into English :—

12

يد رخشان بکشد بر
 زاغ پیران فرو برد سر
 تهمتن بهوشید ببر بیان
 نشست از بر ازدهای دمان
 بیامد بدان دشت آوردگاه
 نهاده ز آهن بسو بر کلاه
 وز آنروی سهراب ببا انجمن
 همی می گسارید بارود زن
 بهومان چنین گفت کان شیر مرد
 که بامن همی گردد اندر نبرد
 ز بالای من نیست بالاش کم
 برزم اندرون دل ندارد دژم
 برو کتف و یالش بحاندد من
 تو گوئی که دافنده بر زد رسن
 ز پای ورکیش همی مهر من
 بجنبید بشرم آورد چهر من

(b) What is بیان ? Why is it so called ?

1

(c) Account for the final ۛ in the following :—

2

خصال حمیده — رجال مذکوره — قرقه برقیه — لباس فاخره

9. Expand the idea in the following lines :—

5

ابرو باد و مه خورشید و فلک در کارند
 تا تو نانی بکف آری و بغفلت فغوری
 همه از بهر تو سرگشته و فرمان بردار
 شرط انصاف نباشد که تو فرمان نبری

Answer this in Persian.

10. Translate into good *terse* Persian :—

In the preliminaries of negotiation, Alp Arslan asked the Emperor Romanus what treatment he expected to receive, and the calm indifference of the emperor displays the freedom of his mind. 'If you are cruel,' said he, 'you will take my life; if you listen to pride, you will drag me at your chariot wheels; if you consult your interest, you will accept a ransom, and restore me to my country.' 'And what continued the Sultan,' would have been your own behaviour, had fortune smiled on your arms.' 'The reply of the Greek betrays a sentiment, which prudence, and even gratitude, should have taught him to suppress. 'Had I vanquished,' he fiercely said, 'I would have inflicted on thy body many a stripe.' The Turkish conqueror smiled at the insolence of his captive: observed that the Christian law inculcated the love of enemies and forgiveness of injuries: and nobly declared that he would not imitate an example which he condemned.

PERSIAN.

FOURTH HONOUR PAPER.

Examiner—MAULAVI ZAHADUR RAHIM ZAHID, M.A., B.L.

The figures in the margin indicate full marks.

1. Translate into English :—

14

و چون خانخان باردوزی بزرگ جبهه ساری عقیدت گشت
 باشاره همایون صفوتکده قدس را آراستند و نهضت سرای خلوت
 زینت گرفت و انجمن زار خسروانی از غیر پرداخته آمد
 دولت منشان خرد پزوه و بخت آوران دیده در و معامله شناسان
 حقیقت بین که با راستی و درستی مردانگی و دولتخواهی
 غازه چهره روزگار ایشان بود حفظ مراتب و پاس حدود نموده
 سخن گذار و نکته سرای شدند و هر کدام در خور صفای جوهر
 و اندازه دریافت لازم وقت و مستحسن حال را بموقف عرض
 مقدس که عیارگاه نقود جواهر دانش اندوزی و محک طلای
 خالص دور بینی است رسانیدند گروهی که شعاع بینش آنها
 از مناظر صورت نگذرد چنان معروض داشتند که تا سپری شدن
 موسم باران ولایت بهار را که بتصرف اولیای دولت در آمده از

خس و خاشاک مخالف پاک باید ساخت و در عفووان
 طلوع سهیل دلنهاد تسخیر بنگاله شد و جمعی از تیزجلوی
 و فرط مردانگی و برخی از کاردانی و معامله فهمی چنان
 نمودند که بی توقف دست به بنگاله زدن و غنیم را فرصت
 سرانجام ندادن ناگزیر است و حضرت شاهنشاهی از وفور غیب
 بیغی و فروغ نیز باطن سخن این گروه را پسندیده همت
 جهانکشای بتسخیر بنگاله بستند *

2. (a) Give the significations of the suffixes in the following words : 3

رودبار - صفوتکده - بخت آور - گلشن - مردانه - انجم زار

(b) Give the etymology of --

3

قوسنگ - دهقان - چوپان - چوگان - جوهر

3. Illustrate by examples the various uses of the letter g as a suffix. 4

4. Give a free rendering in simple Persian of the following passage :—14

و تخت جزایر چیان بهرام کین و تفنگچیان صلابت قرین را
 از جانب شرقی و غربی کوه بیورش مامور ساختند فرمان بران
 بموجب امر والا از دوطرف فائز کین افروخته مانند شعله آتش
 که میل بمركز کند آهنگ صعود کرده هرچند تفنگچیان محمد
 از فراز کوه ژاله آتشین از غمام تفنگ فرو ریختند دلبران آن را
 قطرات ابر بهاری و رشحات سحاب کوهساری تصور کرده
 بدرستی قدم برتر گذاشتند و بهای استعلا بران قلعه بلند که سر
 بر سپهر برین میزد دست استیلا یافتند و یک ساعت کامل از
 جانبین نوایر شور و شین اشتعال داشت تا اینکه محمد بعزم
 نظاره لشکر نصرت اثر پدالی کوه بر آمده همین که جیغه زمردنگار
 همایون مشهود نظر آن افعی خصال گشت دانست که توسن
 بخشنش پی و مرحله عمرش طی شده این المفر گویان شبذیز گریز
 رابه مهمیز تیز انگیز داده دلاورانیکه مانند دشنه بخون اوتشفه

بودند بحکم والا فوجی از راه فہلیان و جمعی از راه تڨک کرا
بتعاقبش پرداختہ تا دہ فرسخ اشہب دلاوری را عنان و در زدن
و کشتن و بستن و انگندن سپاہ آن رؤسیاہ دہست از قبضہ تیغ
و سنان نکشیدند *

5. (a) Explain the allusion or the popular belief referred to in the passage :— 2

مانند شعلہ آتش کہ میل بمرکز کند آہنگ صعود کرد

(b) What is the meaning of تر دستی in the above extract ? What is its ordinary meaning ? 2

(c) Give the singular of— 3

أحياء — لآلى — اعمار — جلائل — مراحل — نوایر

6. Explain any seven of the following idioms :— 7

آب زیر کاہ — طشت از بام افتادن — آب چشم کس گرفتن —
خمیازہ چیزی کشیدن — پا توی کفش کسی نهادن — آب
رفته بچو آمدن — بانگ بر مردم زدن — بہ پوستین کسی
افتادن — آب بر آئینہ ریختن — انگشت نیل کشیدن —
کوزہ اش خیلی آب بر میدارد — از آسیا افتاد

7. Translate into English :— 12

و چون فوجہای ہر دو طرف نزدیک رسید اول جرانغار غنیم
پیشدستی نمودہ بر سر برنغار سپاہ اقبال تاخت و اکثر مردم قطب
الدین خان را برداشتہ برد و خان با معدودی پای جلاہت آفشردہ
داد مردانگی داد و شمشیری بر میان دو دندان فیل غنیم
رسانیدہ حیرت افزای شد و ہراول آن بخت برگشتگان بر ہراول
لشکر نصرت قرین تاخت فیل نوزنگ خان کہ عنقریب مستی
او بود در عین شورش و غوغا متوجہ یکی از سواران فوج خود
شدہ او را درہم مالید و مقارن این حال دلاوران مخالف ہراول
لشکر فیروزی مند را برداشت التمش نیز قاب نیارودہ بی ہمتی

نمود و این فرار نموده‌ها بعضی بدست راست و لختی بدست چپ عیان تماسک از دست دادند و افغانان بیشتری بصوب گریختها شتافتند، و قریب پانصد سوار رو بروی خان اعظم آمدند و در اندک فرصتی درهم نوردیده گشتند و آن طایفه دیگر که هراول و التمش را برداشته بودند خود را بجرانغار لشکر منصور رسانیدند بیشتری از مردم جرانغار را همت یابری نکرد مراد خان خود یکسو شده تماشائی گشت و شاه محمد خان را نوکران او زخمی برداشته باحمد آباد روان شدند *

8. (a) Criticise the tenses of the final verbs in the following :— 4

(i) امیدوارم درین روز تنگی اعانت خود را از من دریغ نداری .
or نخواهی داشت *

Can you substitute نمیداری ?

(ii) جان خود را از شما دریغ نخواهم داشت or نمیدارم or ندارم

(b) What is the difference in meaning between— 2

رود حائله درمیان ایشان بود and رود درمیان ایشان حایل بود

9. Explain briefly in Persian what is meant by the proverb— 10

عبر تلخ است ولیکن بر شیرین دارد

10. Translate into Persian :—

20

There are few characters, we have remarked, in oriental history more doubtful than that of this great conqueror. By some he is extolled as the model of a perfect prince, while others brand him as a monster of avarice, injustice, and rapacity. There seems to have been in his nature a strange combination of opposite qualities, his best actions being alloyed by a mixture of wild caprice. He carefully discharged many of his duties as a sovereign, and made great exertions to secure the husbandman and merchant against the inroad of the predatory bands who occupied the mountain fastnesses. He was accessible to complaints from every quarter. A woman from a remote Persian province came to his audience, and complained that her son had been killed and her property carried off by a gang of plunderers. The king replied that this was a distant conquest, in which it was impossible for him to prevent some disorders. The woman warmly rejoined, 'Why then do you conquer kingdoms which you cannot protect, and for which you will not be able to answer in the day of judgment?' That this rebuke could be addressed to the king was no small honour to his character, and still more when we find that it roused him to establish order in those remote parts of his dominions.

HISTORY.

Paper-settlers— $\left\{ \begin{array}{l} \text{M. E. DU S. PROTHERO, ESQ., M.A.} \\ \text{J. N. DASGUPTA, ESQ., B.A. (OXON), BAR-} \\ \quad \text{AT-LAW.} \\ \text{REV. A. B. WANN, M.A., B.D.} \end{array} \right.$

FIRST PASS PAPER.

Examiner—BABU JADUNATH SARKAR, M.A.

The figures in the margin indicate full marks.

History of England.

1. Indicate the more important consequences of the Roman occupation of Britain, and give a brief account of the state of the country after the departure of the Romans. 13
2. Say what you know of Theodore of Tarsus, and of the church councils associated with his name. Explain the real significance of the dispute between Colman and Wilfrid. 13
3. Give a brief account of the more important legislative measures of Edward I, and indicate the constitutional importance of the reign of Edward III. 13
4. Discuss the constitutional points involved in the controversies associated with (a) the trial of the Seven Bishops; (b) the Septennial Act; (c) the Peerage Bill (1719). 13
5. Give an estimate of the statesmanship of Sir Robert Peel, dwelling on his attitude towards his party with reference to the repeal of the Corn laws and the question of Catholic emancipation. 13

Either—The History of India.

6. Criticise the provisions made by Lord North's Act of 1773, and by Fox's India Bill for the government of India. 11
7. What do you consider to have been the conception of Warren Hastings of the nature and aims of British dominion in India? Illustrate your answer by reference to (a) the First Mahratta War; (b) the Rohilla War; (c) the case of Cheyte Singh. 12
8. Review the administration of Lord William Bentinck, commenting on his policy in regard to native states, and recounting the measures by which he sought to elevate the moral and intellectual character of the people committed to his charge. 12

Or—The History of Greece.

6. Discuss the statement that the meaning of the Greek Conquest has been generally misconceived. Give the substance of Professor Bury's comments on the Greek reconstruction of early Greek history. 11
7. Describe the main features of the Athenian democracy in the age of Pericles. What is meant by the *imperialism* of Pericles, and on what grounds has his imperialist policy been assailed? Justify the statement that the Periclean age was not made by Pericles. 12

8. Give some account of the retreat of the Ten Thousand, and indicate the significance of the expedition of Cyrus in the history of Greece. In what sense is this expedition an epilogue to the invasion of Xerxes, and a prologue to the conquest of Alexander?

HISTORY.

• SECOND PASS PAPER.

Examiner—BABU BIPINBIHARI SEN, M.A.

The questions are all of equal value.

• Political Economy.

1. Indicate four economic advantages afforded by the division of labour. Which do you consider the most important; and why? Illustrate your answer from any trade or profession except pin-making.

2. State and prove the leading proposition regarding rent of land, in Ricardo's theory. Under what circumstances is the proposition (a) approximately true, (b) considerably to be modified, (c) altogether inapplicable? Illustrate, if possible, from India.

3. Distinguish between the two uses of the term 'value of money'; and show by examples how the value of money is measured in each case. Is a currency note money? Is a bank cheque money? Discuss this in view of the definition and functions you assign to money.

4. Show how a system of taxation, in which every tax is objectionable, may yet be a fair system on the whole. Compare the Indian and the English income-tax. It has been said that a tax which produces a small amount is a bad tax; show that there is generally some truth in this statement even from the point of view of the tax-payers.

5. Give an outline of the principles of International Trade.

Either—History of India, &c.

6. Give an account of the Seljuks, and of the characters and reigns of the first three Sultans of that race.

7. State what is known regarding the external commerce and colonization of the Indians in ancient times.

8. Briefly sketch the life and character of Humayan. Draw a map showing the political divisions of India in his time.

Or,

Give a brief history of the Rajput states, paying special attention to their relations with other powers. Illustrate by a map.

Or—History of Rome.

6. Sketch the leading features in the organization of the Roman people and state in the third century B.C.

7. Trace the relations of the Latins to Rome until they attained full citizenship. Was there any survival of the *Latinitas* after that time?

8. Compare the territories and strength of Rome at the period of the First Punic War and at the period of the First Macedonian War. Illustrate by maps.

Or,

Give an account of Caesar's conquest of Gaul, illustrated by a map. Write a note upon the Gauls.

HISTORY.

FIRST HONOUR PAPER.

Examiner—MANMATHANATH BASU, ESQ., BAR.-AT-LAW.

The figures in the margin indicate full marks.

History of England.

1. Amplify and justify the statement that 'the oath taken at Salisbury was the completion of William's work in England.' 12
2. Explain the attitude of the Barons towards the Crown in 1173, in 1215, and in 1258. 12
3. How did the Black Death affect the economic condition of the country? Trace the causes and the consequences of the Peasants' Revolt of 1381. Give the substance of Langland's teaching, and explain how his work was really revolutionary in its nature. 12
4. Discuss the statement that 'Modern England began however dimly with the triumph of Naseby.' 12
5. Write a connected account of the various attempts at Parliamentary Reform made between 1770 and 1830, and account for the failure of these attempts. 12
6. Explain the constitutional importance of the points at issue in the controversies associated with (a) the impeachment of Danby; (b) the Regency Bill of 1788; (c) the bed-chamber question. 12

The English Constitution.

7. Illustrate the advantages and the drawbacks of constitutional royalty from the reigns of George III and Queen Victoria. 14
 8. What, according to Bagehot, are the various functions of the House of Commons in the English constitution, and how far are these efficiently discharged? 14
- Examine the statement that the principal peculiarity of the House of Commons in financial affairs is nowadays not a special privilege, but an exceptional disability.

HISTORY.

SECOND HONOUR PAPER.

Examiner—C. H. BROWNING, ESQ., M.A.

All the questions will carry the same number of marks.

Political Economy.

1. Contrast the mediæval with the modern system of industry. What were the chief mediæval obstacles to mobility of labour? How far have they been removed at the present time?

2. Compare the effect of an increase of population upon rent and profit respectively. Show that these effects are tendencies only.

3. What does Marshall call the equilibrium position of the scale of production? If the scale is accidentally moved from the position of rest, what causes are set in motion which tend to bring it back to this position?

4. 'Labour will not keep.' Explain this, and show how the adjustment of demand and supply relatively to labour differs from its adjustment relatively to commodities.

5. What are wages? Explain how 'free competition tends in the direction of making each man's wages equal to the *net product* of his own labour.' Why have wages in England not increased in proportion to the increase of the National wealth? Explain Mill's statement that 'the cost of labour, and therefore the rate of profit, is a function of three variables.'

6. 'The undertaker stands as a buffer between the buyer of goods and the various classes of labour by which they are made.' Show the precise nature of the undertaker's services to society, and point out how they are remunerated.

7. 'If therefore it is necessary that the price of wheat should rise in order to make the cultivation of inferior land remunerative, the price of all wheat must rise in a similar manner.' What consequences follow from this?

8. What general causes determine the amount of money in circulation in a country, and how is the surplus disposed of?

9. Examine the influence of credit upon prices. What forms of credit exercise the greatest influence upon prices, and why?

10. Describe the most important results of the Californian and Australian gold discoveries. How have the gold discoveries promoted the industrial progress of Australia?

HISTORY.

THIRD HONOUR PAPER.

Examiner—C. H. BROWNING, ESQ., M.A.

All the questions will carry the same number of marks.

Greek and Roman History.

1. 'Political discontent was an immediate cause of colonization; conversely it may be said that colonization was a palladium of aristocracy.' Explain this. How did colonization promote a feeling of unity among the Greeks, and what other influences had the same effect?

2. 'In order to make democracy (at Athens) a reality, it was indispensable to deprive the clans of political significance, and to substitute a new organization.' Why was this? Describe the organization alluded to. How did the systems of election by lot and payment to the holders of office contribute to the further development of democracy at Athens?

3. Sketch the steps by which Athens obtained her Empire. What was the relation between her and the states constituting her Empire, and how was it opposed to Greek political sentiment?

4. Describe the policy followed by Alexander the Great for the fusion of the Greeks and Asiatics.

5. What were the sources of early Roman History ? Discuss their credibility.

6. Under what disabilities did the Plebeians originally labour ? Trace the gradual establishment of complete equality between the orders.

7. The Roman people consisted of those who possessed 'the full rights included in the word *civitas*.' Compare these rights with the status of possessors of the *Latinitas*, and of the inhabitants of *foederatae civitates*. What concessions were made to the Italians after the Social War ? Explain the dispute as to the form these concessions should take.

8. What was the nature and extent of the influence exercised by the Greeks upon the Romans ?

MILL'S *Representative Government*.

9. Distinguish the effect produced on the masses by (a) the possession of large political power, (b) the possession of all political power. With what exceptions should Universal Suffrage be introduced, what are its special dangers, and how can they be guarded against ?

10. What, according to Mill, are the characteristics of an ideal Second Chamber, and how would he constitute it ? Why is a Second Chamber desirable ?

HISTORY.

FOURTH HONOUR PAPER.

Examiner—MANMATHANATH BASU, ESQ., BAR.-AT-LAW.

The questions are all of equal value.

1. Write notes on (a) caste, (b) the village community, indicating what has remained constant and what has changed since the time of Manu.
Or,

Note the chief points in the history of the relations of the Mohammedans with India up to the year 1000 A.D. : and account for the slowness of their advance.

2. Write an account of the political condition of India about the year 1325 A.D. illustrated by a map.

3. Give an outline of the reign of Shah Jehan. In what respects is it true that 'no prince ever reigned in India that could be compared to Shah Jehan' ?

4. Narrate the chief events in the life of Asaf Jah, Nizam-ul-Mulk ; and sketch the history of the principality which he founded.

5. Give an account of the Burmese Wars,—their causes, conduct, peculiar conditions, and results.

6. At what period was the British domination in India in the greatest danger ? Give reasons for your answer, comparing the period named with other critical periods.

7. Give an account of the dominions, reign, court, and character of Harūn ar-Rashid.

8. Estimate the services of Saladin to the cause of Islam ; and state how the Mahommedan world was divided in his time.

BENGALI COMPOSITION.

(OPTIONAL PAPER.)

Paper set by—BABU JOGENDRANATH BASU, B.A.*Examiner*—BABU DINESCHANDRA SEN, B.A.*The figures in the margin indicate full marks.**Answers to be always in Bengali.**Two subjects to be selected, one from each Group.*

GROUP A.

1. Bengali Poetry with its four prominent epochs, represented by Bidyapati, Mukundaram, Madhusudhan, and Ravindranāth—the distinctive features and principal works of each epoch and the influence of each epoch on the succeeding one in particular and on the permanent literature of Bengal in general. 70
2. The Ramayan and the Mahabharat, compared and contrasted with the Iliad, as standard works on morality and religion, and their influence on the character and domestic life of the Hindus. 70
3. The Bishabriksha of Bankimchandra with an analysis of its incidents and characters and its excellences and imperfections, judged from social and moral standpoints of view. 70
4. The makers of modern Bengal, European and Indian. 70

GROUP B.

1. The greatness of a nation and its dependence on the self-sacrifices of its men and women—showing that self-sacrifices of peace are as honourable as self-sacrifices of war—furnishing examples of self-sacrifices of either sex in the different pursuits of human life—literature, fine arts, politics, war, religion, &c. 30
2. The influence of physical causes in the formation of intellectual and moral characters as may be illustrated from the occupations and temperaments of the different nations of Asia and of Europe. 30
3. Religious and social reforms in Bengal since the days of Balshar and their influence on the literature of the country. 30
4. The progress of Asia under Western influence as illustrated in the history of Japan and of India—the similarities and dissimilarities in the conditions of these two countries and what the latter can learn from the former. 30

URDU COMPOSITION.

(OPTIONAL PAPER.)

Paper set by—SHAMS-UL-ULAMA MIRZA ASHRAF ALI.*Examiner*—MAULAVI MUHAMMAD YUSUF JAFFARI.*The figures in the margin indicate full marks.*

Write essays in Urdu on the following subjects :—

(a) On travel :—its benefits as to the acquisition of the knowledge of sciences and arts ; its influence on the formation of character. Travelling in various parts of the world, in order to have an opportunity of observing nature in her various aspects ; also of observing the curiosities of the world ; and to get information of the different manners and customs of various nations of the world. 60

(b) On any Urdu historical work or *masnawi* by a modern author ; analysing its chief merit as a work of art, and giving a biographical sketch of its author. 20

(c) On the morals derived from the following couplets :— 20

(i) اس گلشن کی ہستی میں عجب دید ہے لیکن

جب چشم کھلی گل کی تو موسم ہے خزان کا

(ii) نہیں معلوم کیا کیا خاک میں ان نے ملا دیکھا

کہ چشم نقش پا سے تا ابد نکلی نہ حیرانی

HINDI COMPOSITION.

(OPTIONAL PAPER.)

Examiner—LALA SITARAM, B.A.*The figures in the margin indicate full marks.**Answers to be always in Hindi.*

Write essays on any two of the following subjects :—

(a) 'Sweet are the uses of adversity.'—out of their trouble all the lovers in Shakespeare's *Twelfth Night* came into happiness, into wedlock—Viola just rescued from one death and threatened with another—her taking practical steps for her future life and her success—the character of Orsino. 50

(b) Famine in India—absence of relief in former times—export of grain—advantages of free trade—relief measures under the Brit- 50

ish government—relief works—charity—remission of rent payable by tenants.

(c) 'The longer one lives, observes, and thinks, the more deeply does he feel that there is no community on the face of the earth which suffers less from political evils and more from self-inflicted or self-accepted or self-created, and therefore avoidable evils, than the Hindu community'—need of social reform. 50

(d) Money—value of an article fixed with regard to human skill and labour in acquiring or making it—barter— invention of money—property—wealth—capital—judicious investment—liberality—niggardliness. 50

URIYA COMPOSITION.

(OPTIONAL PAPER.)

Examiner—RAI MADHUSUDAN RAO BAHADUR.

The figures in the margin indicate full marks.

1. Write essays on any two of the following subjects :—

(a) *Art*.—Division into the useful and the fine arts.—The useful arts called into being by the actual wants of man in the material world and the fine arts springing from some great emotion as love, patriotism or religion.—Illustrations.—The chief among the useful and the chief among the fine arts.—The neglect of art culture in India.—All art must obey the laws of nature and depend upon the true, the good and the beautiful whose ideals are implanted in the heart of man. 50

(b) *Poetry of Kalidas*.—A few illustrations of the play of imagination and that of fancy from those of his poems which you have read.—The rhythm of his poetry and his choice of words.—His similes and alliterations. His creative and descriptive powers.—His heroes and heroines and the predominance of virtue in their characters.—Use of mythological and Paurānic legends by Kalidas and his elimination of all meanness and inelegance from them.—His treatment of the sweet, tender and beautiful as contrasted with that of the grand and terrible. 50

(c) *Western civilisation*.—Its salient features.—Study and diffusion of physical science and the utilization of the great forces of nature for the service of man.—Liberty and representative government.—Equality and socialistic developments.—Fraternity and co-operation, resulting in the formation of societies for various purposes.—The position and the influence of woman.—The desire for material prosperity and that for moral amelioration compared in respect of intensity. 50

(d) "Words pass as wind, but where great deeds were done,
A power abides, transfused from sire to son." 50

B.Sc. Examination.

1907.

ENGLISH.

PASS PAPER.

Moderated by—A. MACDONELL, Esq., M.A.

[INSTRUCTIONS.]

One essay should be written on one and one only of the subjects in Physics or Chemistry contained in GROUP (A) below, and one essay and one only should be written on one of the optional subjects taken up by the Candidate and contained in GROUP (B).

If the second essay is on a subject not included under the optional subjects taken up by the Candidate it will not be examined.

The essays will be valued mainly on account of the Candidate's knowledge of English, and of his power of expressing himself grammatically, idiomatically, accurately, and concisely in that language. At the same time errors of fact in the portion of the sciences dealt with in the essays will be considered to reduce the value of the essay, and the essay must show a sufficient knowledge of the particular scientific subject dealt with.

Each essay will carry 100 as full marks.

Group (a). PHYSICS.

Examiner—C. W. PEAKE, Esq., M.A.

1. Write an essay on Wireless Telegraphy.
2. Write an essay on the Conservation of Energy.

Group (a). CHEMISTRY.

Examiner—J. A. CUNNINGHAM, Esq., B.A., F.C.S., A.R.C.S.

1. Write an essay on the Importance of Crystallography in Chemistry.
2. Write an essay on Electrolysis.

Group (b). PHYSIOLOGY. Subject V.

Examiner—CAPT. D. MCCAY, M.D., M.Ch., B.A.O., R.U.I., I.M.S.

1. Write an essay on Secretion.
2. Write an essay on the changes that take place in muscle during contraction, laying stress on the electrical changes.

*Group (b). BOTANY. Subject VI.***Examiner**—I. H. BURKILL, ESQ., M.A., F.L.S.

1. Write an essay on the effect of Parasitism on plants.
2. Write an essay on the interdependence of plants and animals.

*Group (b). GEOLOGY. Subject VIII.***Examiner**—T. H. HOLLAND, ESQ., D.Sc., F.R.S., F.G.S.,
A.R.C.S.

1. 'The ocean is constantly parting with some of its water through the action of the solar heat; but this water after a journey through the air and earth eventually returns to the sea.' Write an essay on this.
2. Write an essay on the functions of the sea, both destructive and constructive, considered from a geological point of view.

*Group (b). MINERALOGY. Subject IX.***Examiner**—T. H. HOLLAND, ESQ., D.Sc., F.R.S., F.G.S.,
A.R.C.S.

1. Write an essay on Isomorphism.
2. Write an essay on the importance of Optical methods in the determination of minerals.

*Group (b). OPTIONAL MATHEMATICS. Subject X.***Examiner**—F. TURNER, ESQ., B.A.

1. Write an essay on the Solar System.
2. Write an essay on the use of Differential Calculus.

PHYSICS.

FIRST PASS PAPER.

Paper-setters— $\left\{ \begin{array}{l} \text{G. W. KÜCHLER, ESQ., M.A.} \\ \text{J. A. CUNNINGHAM, ESQ., B.A., F.C.S.,} \\ \text{A.R.C.S.I.} \\ \text{A. MACDONELL, ESQ., M.A.} \end{array} \right.$

Examiner—W. H. EVERETT, ESQ., B.A., B.E., M.I.E.E.*The figures in the margin indicate full marks.*

1. Explain Doppler's principle. Give an actual example of its application to the explanation of a natural phenomenon. 10
2. What is a resonator, and how are resonators employed to analyse a compound note? Explain the principle on which their action depends. 9
3. What effect has pressure on the melting-point of substances? Explain the motion of a glacier. 9
4. What is meant by the thermodynamic efficiency of a heat engine? 10

How may it be increased? Compare the possibilities in this respect of a gas engine with those of a steam engine.

5. Describe in detail any method by which the velocity of light has been determined experimentally. 9

6. Give a general explanation of the construction of an achromatic lens, with a diagram to show the paths of rays incident parallel to the axis through each of the component lenses when used separately. 11

7. Describe how you would measure the direction and amount of magnetic stress near a magnet. 10

8. State Ohm's Law, and explain how to use it to calculate the best arrangement of a number of cells so as to obtain the maximum current through a given resistance. 10

9. Distinguish between primary and secondary chemical actions in electrolysis, and describe some cases of different kinds of secondary actions. 10

10. Find an expression for the work done in charging to a potential V a condenser consisting of two large parallel plates of metal separated by an insulator whose dielectric constant is k . Hence prove that the energy per unit volume of the dielectric is equal to $F^2 k/8\pi$, where F denotes the electric intensity. 12

What is the purpose of a 'guard ring'?

PHYSICS.

SECOND PASS PAPER.

PRACTICAL.

Examiners—{ W. H. EVERETT, ESQ., B.A., B.E., M.I.E.E.
C. W. PEAKE, ESQ., M.A.

1. Find the specific gravity of Copper by the help of the Balance.

or,

Find the specific gravity of Marble by means of Nicholson's Hydrometer.

or,

Find the value of g by observations of the time of vibration of a simple pendulum.

Describe your experiments clearly and fully, indicating briefly the sources of error that are likely to affect your results and the steps you have been able to take to eliminate them.

2. Read the verniers attached to the following instruments:—
(1) Barometer, (2) Sextant, (3) Theodolite.

3. Draw a curve to illustrate the changes of temperature that have occurred during a day from the following data:—

| | | | | | | | | |
|-------|----|--------|--------|------|------|---------|--------|--------|
| Time | .. | 8 A.M. | 9 A.M. | 10 | 11 | 12 noon | 1 P.M. | 2 P.M. |
| Temp. | .. | 52.2 | 53.4 | 61 | 69.8 | 75.7 | 77.8 | 78.1 |
| Time | .. | 3 P.M. | 4 | 5 | 6 | 7 | 8 | |
| Temp. | .. | 76.9 | 72.5 | 67.8 | 66.8 | 60.0 | 51.1 | |

Determine from your curve the probable temperature at 11.30 A.M. and 6.20 P.M.

PHYSICS.

FIRST HONOUR PAPER.

Examiner—W. H. EVERETT, ESQ., B.A., B.E., M.I.E.E.*The figures in the margin indicate full marks.*

1. Explain how a pendulum is made to regulate a clock. 8
2. Define Young's Modulus, and explain how it is measured. 10
3. What is the constant of capillarity, and how is it determined? 10
4. Explain how, by observation of echoes, the velocity of sound in air can be measured. How is the velocity in a metal rod found out? 10
5. What is the use of a sounding-board? What effect has the board on the rapidity with which the sound dies away? 10
6. Define stationary waves, and explain how they are formed. 12
7. What is an indicator diagram? Show how by means of such a diagram the rate of working of an engine may be determined. 10
8. The volume of one gram of water at 100°C. is 1.04 c.c.s. The volume of the steam formed from it at 100°C. under ordinary atmospheric pressure is about 1650 c.c.s. How much of the heat required to change the water into steam is used up in doing external work? 12
9. Give an account, with examples, of the Theory of Exchanges. 10
10. Write a note on the meaning of the word 'temperature.' 8

PHYSICS.

SECOND HONOUR PAPER.

Examiner—W. H. EVERETT, ESQ., B.A., B.E., M.I.E.E.*The figures in the margin indicate full marks.*

1. Prove the formula $\frac{1}{p} + \frac{1}{p'} = \frac{1}{f}$ for the relation between the distances, from the surface of a thin lens, of two conjugate foci. 10
How will this formula be modified if the lens separates two media of different refractive powers?
2. Explain the construction and use of the ordinary spectroscope. 10
3. Show how the ordinary laws of refraction can be explained on the wave theory of light. 10
4. Give a simple explanation of the phenomenon of diffraction, and show clearly how it can be employed to measure wave-lengths of light. 10
5. Define electric force, electric potential, lines of force, tube of force, equipotential surface, and show that the lines of force are perpendicular to the equipotential surfaces.
If a quantity of electricity is concentrated at a point, and an imaginary closed surface is drawn, not enclosing the point, show that $\Sigma FS = 0$, where F is the normal force at any point of the surface due to the electricity, and S is a small element of the surface round the point in question.

Extend this theorem to the case of any distribution of electricity outside the imaginary surface.

6. Define magnetic intensity, magnetic induction, permeability 10
susceptibility, reluctance.

Show that $\mu = 1 + 4\pi\kappa$, where μ and κ are the permeability and susceptibility respectively.

How far does the analogy, between reluctance and resistance hold good?

7. What is the magnetic distribution to which an electric current 10
flowing in a closed circuit is magnetically equivalent?

Hence find the force exerted by a circular current on a unit pole at any point on the axis.

8. What is meant by a current transformer? Give an elementary 10
account of the theory of the subject.

9. Write a short essay on either :—(a) Double refraction, or (b) the 20
researches of Hertz.

PHYSICS.

THIRD HONOUR PAPER.

(PRACTICAL.)

Examiners—{ W. H. EVERETT, ESQ., B.A., B.E., M.I.E.E.
C. W. PEAKE, ESQ., M.A.

1. Determine the radii of curvature of the two surfaces of the double concave lens provided. Measure also the thickness of the lens at the circumference of the polished surfaces, and the diameter of the lens. From the above measurements deduce the thickness at the 80
centre of the lens.

2. Find the refractive index of the glass plate supplied. 45

3. Read the verniers on the barometer, sextant, and theodolite, as 30
now set.

4. Determine the mean radius of the wire provided, with the aid 45
of a balance and an ordinary scale.

CHEMISTRY.

FIRST PASS PAPER.

Paper-setters—{ W. H. ARDEN WOOD, ESQ., M.A., F.C.S.,
F.R.G.S.
DR. P. C. RAY, D.Sc., PH.D., F.C.S.
REV. FATHER E. FRANCOTTE, S.J.

Examiner—DR. P. C. RAY, D.Sc., PH.D., F.C.S.

The figures in the margin indicate full marks.

1. What is valency? What are unsaturated compounds? Give 12
examples?

Iodine and fluorine are generally regarded as monads. How then do you account for ICl_3 and HF , KF ?

2. Give some account of the heat changes which accompany chemical changes. What are exothermic and endothermic compounds? Give examples. 13

The heat of formation of NaCl being 96,510, and of NaBr 85,580, and of NaI 70,300, can you conclude anything as to the action of free chlorine upon solutions of sodium bromide and sodium iodide?

3. What compounds of phosphorus occur in nature? How is the element obtained from them? What are its properties? 12

4. Explain the formation of acetylene when coal gas is burnt with an insufficient supply of air. 13

How is acetylene prepared on the large scale? How can the presence of small quantities of the gas be readily detected? Give the equation expressing the reaction which occurs.

5. Describe the process of manufacture of commercial sulphuric acid. What impurities are generally present, and how may they be removed? 12

6. In what form is tin most commonly found in nature? How is the metal obtained? What are the properties which give tin its special technical value? Describe the preparation and properties of stannous chloride. 13

7. What are the following bodies:—corrosive sublimate, calomel, white precipitate, hematite, heavy spar, galena, horn silver, calamine? 12

Describe how the metal may be obtained from one of these bodies.

8. For what reasons are magnesium, zinc, and cadmium classed together? How are the chlorides of these metals prepared? 12

CHEMISTRY.

SECOND PASS PAPER.

(PRACTICAL.)

Examiners— $\left\{ \begin{array}{l} \text{J. A. CUNNINGHAM, ESQ., B.A., F.C.S.,} \\ \text{A.R.C.S.I.} \\ \text{DR. P. C. RAY, D.Sc., Ph.D., F.C.S.} \end{array} \right.$

Time allowed—3 hours.

Analyse the two simple salts supplied.

N.B.—Great importance is attached to the manner in which your results are written up.

CHEMISTRY.

FIRST HONOUR PAPER.

Examiner—DR. P. C. RAY, D.Sc., Ph.D., F.C.S.

The figures in the margin indicate full marks.

1. How is pure hydrobromic acid prepared, and what are its properties ? 14
2. Explain the chemical processes involved in the manufacture of bichromate of potash from chrome iron ore. What happens if sulphur dioxide be passed into a solution of bichromate of potash containing sulphuric acid ? 15
3. Chlorine is passed into hot and cold solutions of caustic potash respectively. What are the products formed in each case ? Discuss the constitution of bleaching powder. 14
4. Describe briefly the method of separating argon from the atmosphere. How was its existence suspected, and by whom ? 14
5. What changes, if any, do the following compounds undergo under the action of heat :—phosphorous and hypophosphorous acids, sulphates of iron, zinc, and potassium ? 14
6. How is zinc extracted from its ores, and in what respects does it differ from the other metals of the same group ? 14
7. How is aluminium prepared from bauxite ? What is the action upon aluminium of water, hydrochloric acid, nitric acid, and organic acids ? Describe the action of heat upon common alum. 15

CHEMISTRY.

SECOND HONOUR PAPER.

Examiner—DR. P. C. RAY, D.Sc., Ph.D., F.C.S.

The figures in the margin indicate full marks.

1. Describe exactly how you would test an organic substance for (a) chlorine, (b) nitrogen. 15
- How are the silver salts of organic acids prepared, and how are they analysed ?
- 0.5725 gram of the silver salt of a monobasic organic acid was found to contain 0.2700 gram of silver. What was the molecular weight of the acid ?
- Describe generally how rational formulæ are arrived at.
2. Name the more important oxidizing agents employed in the study of organic substances, and give an example of the use of each. 7
3. Describe the manufacture of ethyl alcohol. Give an account of the reactions which occur when a mixture of alcohol and sulphuric acid is heated (a) alone, (b) with acetic acid. 15
- Describe the products in each case.
- Discuss the constitution of ethyl alcohol.

4. What do you mean by a homologous series ? 11
 Show how the alcohols, aldehydes, and fatty acids may be regarded as derived from the paraffins. In what relation do the glycols stand to the paraffins ?
 Contrast the properties of aldehydes and ketones.
 5. What are ethereal salts ? 16
 Discuss the constitution of ethyl acetacetate, and show how it enables the synthesis of the fatty acids to be effected.
 6. Write a short account of glycerine, with special reference to its occurrence, preparation, and constitution. 10
 7. Starting from potassium cyanide, describe how pure urea may be obtained. 14
 State the successive effects of heat on urea.
 8. What is the chemical constitution of tartaric acid ? How is it obtained from succinic acid ? 12
 What physically isomeric forms of tartaric acid are known, and how are they distinguished ?

CHEMISTRY.

THIRD HONOUR PAPER.

PRACTICAL.

Examiners— { J. A. CUNNINGHAM, ESQ., B.A., F.C.S.,
 A.R.C.S.I.
 DR. P. C. RAY, D.Sc., Ph.D., F.C.S.

Careful notes must be made of your experimental work at the time each experiment is performed. No rough paper is to be used.

Time allowed :—5 hours.

1. Find out by dry tests only the bases in the mixture A.
2. Make a systematic analysis of the substance placed before you.
3. Prepare a sample of pure sodium chloride from commercial salt.

MATHEMATICS.

FIRST PASS PAPER.

Paper-Setters— { G. W. KUCHLER, ESQ., M.A.
 J. A. CUNNINGHAM, ESQ., B.A., F.C.S.,
 A.R.C.S.I.
 F. TURNER, ESQ., B.A.

*Examiner—*BIRENDRANATH DE, ESQ., B.A.

The figures in the margin indicate full marks.

1. Define the terms—*force, mass, weight, acceleration, velocity, momentum, work, and energy.* How can the velocity of a point at any particular instant be measured or estimated ? 8

2. Prove that any number of couples in the same plane acting on a rigid body are equivalent to a single couple whose moment is equal to the algebraic sum of the moments of the couples. 9
3. One end of a uniform rod is attached to a smooth hinge and the other end is supported by a string attached to the extremity of the rod. If the rod and string are inclined at the same angle to the horizon, find the reaction at the hinge in terms of the weight of the rod and its inclination. 10
4. Two weights, resting on two rough inclined planes, and connected by a string passing over a smooth pulley at the common vertex of the planes, are in bare equilibrium. Find the relation between the weights, the inclinations of the planes and their two coefficients of friction. 11
5. If the point of support in a common steelyard is accidentally moved $\frac{1}{n}$ th of its distance further from the line of action of the weight, prove that the real weight will be approximately less than the apparent weight by $\frac{1}{n}$ th of the sum of the apparent weight, the weight of the beam, and the movable weight, n being large. 11
6. Prove that the time a body takes to slide down any smooth chord of a vertical circle, which is drawn from the highest point of the circle, is constant. 10
7. Two masses, m_1 and m_2 , are connected by a string; m_2 is placed on a smooth plane inclined at an angle α to the horizon; and the string, after passing over a small smooth pulley at the top of the plane, supports m_1 which hangs vertically. If m_1 descends find its acceleration and the tension of the string. 11
8. Find a general expression for the final velocities after the direct impact of two spheres. 10
9. Prove that the period of revolution of a heavy bob attached by a very fine cord to a fixed point, and swinging round freely in a horizontal circle, is 11

$$2\pi\sqrt{\frac{h}{g}}$$

where h is the depth of the plane of the circle below the point of suspension.

10. If a man rowing n strokes per minute rows a boat at the rate of v miles per hour, and the resistance is kv^2 pounds' weight, find the number of footpounds of work which he does in each stroke. 9

MATHEMATICS.

SECOND PASS PAPER.

Examiner—BIRENDRANATH DE, ESQ., B.A.

The figures in the margin indicate full marks.

1. Explain what is meant by 'pressure at a point.' Show that the pressure at a point is the same in all directions. 8

A vessel containing water with a cork floating in it is placed under the receiver of an air-pump. As the air is exhausted from the receiver, will the cork rise or sink in the water? Give reasons for your answer. 8

2. How would you find the specific gravity of a light solid by observing the fraction of its volume immersed when it is floating in a liquid of known specific gravity? 6

A cylindrical body of height h and horizontal section A , floats with k of its height immersed in a liquid. When a body of weight W is placed on top of it, it is immersed to a depth k' . Find the specific gravities of the floating solid and of the liquid. 8

3. Show (without proofs) how to find the resultant pressure on (1) a plane, (2) a curved, immersed surface. 10

A tank of depth 25 ft. 6 in. has a pipe leading from the bottom of it. The vertical section of the pipe is square and of area 3 sq. ft. and its lower face is in the same plane as the bottom of the tank. The pipe is closed by a disk placed against its mouth and supported in that position by the pressure of the water in the tank. Assuming that the disk barely touches the vertical edges of the pipe, find the pressures on the two horizontal edges. 20

4. Show, with a figure, how to find the centre of pressure of a plane surface, the centres of pressure of the various parts of which are known. 12

Find the centre of pressure of a trapezium whose opposite sides are 6 ft. and 4 ft. respectively, and whose height is 3 ft., the shorter side being in the surface of the liquid. 9

5. Describe the siphon barometer in its simplest form, and show how it is graduated. 10

A siphon barometer is faulty on account of a small quantity of air having been introduced at the closed end of the tube. Show how, by the addition of mercury at the open end, you would find how much air has been introduced, and deduce a formula for obtaining correct readings for the atmospheric pressure. 14

6. Draw diagrams of the barrel of a Smeaton's air-pump to represent the positions of the valves (1) when the piston is ascending, (2) when the piston is descending. 8

Find the degree of exhaustion in a Smeaton's air-pump supposing that all the parts are perfect. State the commonest faults of the parts of the air pump, and show how these would have affected your result. 12

7. Show, by means of a diagram, three methods of describing the position of a star, giving the names of the various arcs which have to be measured. 9

8. Show, by means of a diagram, the causes of the phenomena known as the 'Phases of Venus.' 10

A and B are two planets distant a and b ($a > b$) from the sun. AB subtends an angle θ at the sun. Calculate the fraction of illuminated surface (1) of A visible at B , (2) of B visible at A . 12

9. Describe in your own words the causes of the phenomenon known as the 'Harvest Moon.' 12

* 10. Describe two methods of finding the longitude at sea. 12

At 8-30 p.m., local time, the distance (after clearing) of a certain star from the moon was found to be $15^\circ 13' 42''$. On referring to the Nautical Almanac it was found that as observed from Greenwich, the same star at 3 p.m. and 6 p.m. on the same day was distant $21^\circ 32' 18''$ and $7^\circ 25' 48''$ respectively from the moon. Find, to the nearest minute, the longitude of the place. 20



MATHEMATICS.

FIRST HONOUR PAPER.

Examiner—BIRENDRANATH DE, Esq., B.A.*The figures in the margin indicate full marks.*

1. A system of forces in the same plane is in equilibrium. Denoting by X, Y the components of the force whose point of application is x, y , deduce the equations— 14

$$\sum X = 0; \sum Y = 0; \sum (Yx - Xy) = 0.$$

P is any point in the plane of the triangle ABC , and D, E, F are the middle points of its sides: prove that forces AP, BP, CP, PD, PE, PF are in equilibrium.

2. Find the centres of gravity of a semicircular arc and of the segment of a circular area cut off by a chord. 10

3. Explain some method of finding the stresses in a framework of thin rods freely jointed together in one plane. 12

A framework of n equal weightless rods freely jointed together is maintained in the form of a regular polygon by equal forces P applied at the middle point of each rod at right angles to it. Find the tension or thrust in each rod.

4. A uniform rod rests in limiting equilibrium within a rough hollow sphere: if the rod subtend an angle θ at the centre of the sphere, and if ϕ be the angle of friction, find the angle of inclination of the rod to the horizon. 10

5. Define work and energy. Enunciate the principle of conservation of energy, and prove it in the case of a particle falling freely. 13

A uniform heavy string is placed symmetrically over a smooth peg and has two particles attached to its extremities. Find the velocity of the string at the moment it runs off the peg.

6. State the third law of motion, and deduce the principle of conservation of linear momentum. 16

A smooth wedge of inclination α is placed on a smooth horizontal table. A string, to the extremities of which masses m and m^1 are attached, passes round a smooth peg which projects from the upper face of the wedge, the particles being in contact with the same face of the wedge. Find the acceleration of the wedge.

7. Prove that the path of a projectile in vacuo is a parabola, and find its latus rectum. 13

A particle is projected with velocity n and elevation α from a point in a rough horizontal plane. Find the horizontal distance traversed before the particle comes to rest.

8. Define simple harmonic motion and show how to extend your definition to the case of motion in a curve. 11

MATHEMATICS.

SECOND HONOUR PAPER.

Examiner—BIRENDRANATH DE. ESQ., B.A.

1. Find an expression for the whole pressure on an immersed surface.

A cubical vessel filled with liquid is held so that one of its diagonals is vertical; compare the pressures on one of its upper and on one of its lower surfaces.

2. A uniform log whose measurements are 16 ft. \times 8 in. \times 4 in. and whose specific gravity is $\frac{5}{8}$ floats in water in a position of stable equilibrium. Find with what force one end must be depressed in order that the other end may be just clear of the water.

3. Find the depth of the centre of pressure of any triangle immersed in a liquid.

A tank has a horizontal pipe of square section leading from it, the sectional area of the pipe being 3 sq. ft. and its lower face being in the same plane as the bottom of the tank. The mouth of the pipe is closed by a gate hinged to its upper edge. If there is an air pressure in the pipe of 13 lb per sq. in. find to what height the tank must be filled in order that the gate may be just kept shut.

4. Show, with diagrams, how you might find experimentally the position of the metacentre of a ship, supposed symmetrical, by moving part of the superstructure from one part of the deck to another.

Investigate the conditions for stability of equilibrium of a body partly immersed in water and resting on the plane horizontal base of the vessel containing the water. Adapt your results to the particular case when the immersed portion is part of a right circular cylinder with its axis horizontal.

5. Describe accurately Smeaton's air-pump, showing the various causes which lead to the opening of the valves in the order of their occurrence. Given the volumes of the barrel and receiver and the weights and areas of the valves, find at what points of the n^{th} upward and downward strokes the valves will open.

6. A diving-bell in the form of a right circular cone is lowered to a certain depth in water. Find equations giving the height to which the water rises in the bell and the tension of the supporting chain.

7. A siphon barometer is faulty on account of a small quantity of air having been introduced into the closed end of the tube. Show how you would find, by experiment, how much air has been introduced, and find a formula for obtaining correct readings of the atmospheric pressure.

Investigate the effect of a rise of temperature on such a barometer.

8. Account, with illustrative diagrams, for the apparent annual motion of the sun among the stars. In what way would the annual motion of the sun as observed from a comet differ from that as observed from the earth?

9. Draw a diagram showing the phases of a superior planet, and show, by a rigorous geometrical proof, that a superior planet presents the smallest portion of illuminated surface to the earth at quadrature.

The synodic period of a planet with respect to the earth being T days, find, from first principles, its periodic time.

Calculate the periodic time of Venus by means of Bode's Law.

10. Discuss, in your own words, the causes to which the equation of time is due, and show that it vanishes four times a year.

11. Account, in your own words, for the precession of the equinoxes.

12. At 8-30 p.m., local time, the distance, after clearing, of a certain star from the moon was found to be $15^{\circ} 13' 42''$. On referring to the Nautical Almanac it was found that as observed from Greenwich, the same star at 3 p.m. and 6 p.m. on the same day was distant $21^{\circ} 13' 18''$ and $7^{\circ} 25' 48''$ respectively from the moon. Find, to the nearest second, the longitude of the place.

MATHEMATICS.

THIRD HONOUR PAPER.

Examiner—BIRENDRANATH DE., ESQ., B.A.

The figures in the margin indicate full marks.

1. Find the equations of the bisectors of the angles between the straight lines 5

$$a_1x + b_1y + c_1 = 0, \quad a_2x + b_2y + c_2 = 0,$$

distinguishing carefully between the two bisectors.

Find the centre of the circle inscribed in the triangle formed by the lines 5

$$3x - 4y = 7, \quad 5x + 9y = 4, \quad x = 0.$$

2. Find the condition that an equation of the second degree may represent a pair of straight lines. 5

Show that the pair of straight lines represented by the equation 5

$$hr^2 - 2hxy + ay^2 = 0$$

are at right angles to the pair represented by

$$ax^2 + 2hxy + by^2 = 0.$$

3. Find the equation of a circle referred to any pair of rectangular coordinates. 4

Find the equation of the circle described on any one of the three sides, as diameter, of the triangle formed by the lines 6

$$a_1x + b_1y = 1,$$

$$a_2x + b_2y = 1,$$

$$a_3x + b_3y = 1.$$

4. Show that the rectangular coordinates of a point on a parabola can be given by am^2 , $2am$, and find the geometrical meaning of m . 4

Find the coordinates of a point on the parabola, the normal chord at which is bisected in the ratio of 1 : 2 by the axis. 7

5. Find the equation of a system of coaxial circles. What are the limiting points of the system? 5

Show that a system of coaxial circles can be cut orthogonally by another set of coaxial circles, the centres of each set lying on the radical axis of the other set. 6

6. Find the equation of a parabola, any two tangents to it being the axes of coordinates and the points of contact being distant a and b from the origin. 8

7. Find the equation of the tangent to an ellipse in the form 5

$$\frac{x}{a} \cos \phi + \frac{y}{b} \sin \phi = 1.$$

What is the geometrical meaning of ϕ ?

- If r_1, r_2 be the focal distances of any point on an ellipse, p_1, p_2 the lengths of the perpendiculars on the tangent at the point, and a, b the semi-axes, show that 7

$$(p_1 + p_2)(p_1 r_2^2 + p_2 r_1^2) = 4a^2 b^2.$$

8. Find the polar equation of the tangent at any point P of the conic section 6

$$\frac{l}{r} = 1 - e \cos \theta.$$

Find the angle between this tangent and the radius vector. 4

9. Show that the equation of a hyperbola referred to its asymptotes as axes is 6

$$4xy = a^2 + b^2,$$

and find the equation of the tangent at the point (x_1, y_1) .

- Find the equations of the common tangents to the hyperbolas 4

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1, \quad \frac{y^2}{a^2} - \frac{x^2}{b^2} = 1.$$

10. Find the equation of the asymptotes to the conic 8

$$ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0.$$

MATHEMATICS.

FOURTH HONOUR PAPER.

Examiner—BIRENDRANATH DE, ESQ., B.A.

The figures in the margin indicate full marks.

1. Define a differential coefficient, and from the definition find the differential coefficients of 10

e^x , $\log x$, and $\sin x$.

2. If $n = \frac{1}{x + \frac{1}{x} + \dots}$ to infinity,

show that $\frac{dy}{dx} = \frac{1}{2} \left(1 \pm \sqrt{\frac{x}{x^2 + 4}} \right).$

2. Explain the method of expanding a function in series by differentiation. 10

Expand by this method

$$e^{ax} \sin x, \cos x.$$

3. Find the exponential values of $\sin x$ and $\cos x$, and hence prove De Moivre's theorem. 10

With the help of De Moivre's theorem find the n th differential coefficient of

$$\left(\frac{r}{1-x^2} \right)^n$$

4. Show how to evaluate indeterminate expressions of the forms 10

$$(0, \infty, 0, 1^\infty).$$

Find the value of

$$\left(\frac{a_1^x + a_2^x + \dots + a_n^x}{n} \right)^{\frac{1}{x}},$$

when $x=0$.

5. If r is the radius vector of any point on a curve, p the perpendicular from the origin on the tangent, and t the perpendicular on the normal, find the following expressions for the radius of curvature:— 10

$$(1) \quad r \frac{dr}{dp}, \quad (2) \quad p + t \frac{dt}{dp}.$$

6. Trace the following curves 10

$$(1) \quad x^2y^2 + a^2b^2 = a^2y^2, \quad (2) \quad r = c \cos \theta + d,$$

where $c > d$.

7. Find the values of 10

$$\int e^{ax} \sin bx \, dx, \quad \int \frac{dx}{(x^2-1)(x+1)}, \quad \int \frac{dx}{\sin x (a+b \cos x)}$$

8. Find a formula of reduction for 10

$$\int_0^{\frac{\pi}{2}} \sin^m x \cos^n x \, dx,$$

and find the value of

$$\int_0^{\frac{\pi}{2}} \sin^{2n} x \, dx.$$

Prove that

$$\int_0^{\pi} x^n \sin^m x \, dx$$

$$= \frac{n-1}{n} \int_0^{\pi} x^{n-1} \sin^m x \, dx - \frac{n(n-1)}{n^2} \int_0^{\pi} x^{n-2} \sin^m x \, dx.$$

9. Find the area included between the curve (*a*), in Question 6, 10 and its asymptotes, and also the area of both of the loops of curve (*b*) in the same question.

10. Show that in any curve

10

$$\int \frac{rdr}{\sqrt{r^2 - p^2}}.$$

PHYSIOLOGY.

FIRST PASS PAPER.

Paper-Setters— $\left\{ \begin{array}{l} \text{DR. UPENDRANATH BRAHMACHARI, M.A.,} \\ \text{M.D.} \\ \text{S. B. MITRA, ESQ., B.Sc., M.B.} \\ \text{CAPT. D. MCCAY, M.B., B.CH., B.A.(S.),} \\ \text{R.U.I., I.M.S.} \end{array} \right.$

Examiner—S. B. MITRA, ESQ., B.Sc., M.B.

The figures in the margin indicate full marks.

1. Describe the phenomenon of clotting of blood, and explain how it takes place. 20

2. Explain, as far as you can, how inspiration and expiration are, on the whole, favourable to the circulation of the blood. 15

What is the effect on respiration (*a*) of the stimulation of the central end of the vagus cut below the point of exit of the nerve; (*b*) of the stimulation of the central end of the divided superior laryngeal nerve; (*c*) and of excessive venosity of blood?

3. Describe the structure of a salivary gland. Describe fully the changes that take place in the sub-maxillary gland when the chorda tympani is stimulated. What general facts are known with regard to the conditions of the action of enzymes? 15

4. State exactly the way in which the more important constituents of urine are secreted, giving, as far as you can, the grounds for your statements. 15

5. Describe reflex action. Describe what you understand by the reflex arc. Classify reflex movements, giving examples of each class. 20

Write a short note on the inhibition of reflexes.

6. Give a careful account of the mechanism of the conduction of the sound-vibrations to the sense organ of the internal ear. 15

PHYSIOLOGY.

SECOND PASS PAPER.

(PRACTICAL.)

Examiners— $\left\{ \begin{array}{l} \text{CAPT. D. MCCAY, M.B., B.Ch., B.A.O., R.U.I.,} \\ \text{I.M.S.} \\ \text{S. B. MITRA, Esq., B.Sc., M.B.} \end{array} \right.$

1. Demonstrate the presence of sugar in the urine supplied. 26
Two tests required.
2. Demonstrate purposive reflex action. 25
3. Give a microscopic demonstration of smooth muscular fibres. 25
4. Identify the specimens A, B, C, D, E, F. 24

PHYSIOLOGY.

FIRST HONOUR PAPER.

Examiner—S. B. MITRA, Esq., B.Sc., M.B.

The figures in the margin indicate full marks.

1. Explain fully the nervous mechanism of the heart. Explain how the movements of the heart originate, pointing to any experiments that show how the wave of contraction is propagated along the heart-wall. Describe the structure of the heart muscle, showing how it differs from other muscular structures. 20
2. Describe how the amount of respiratory interchange of gases is estimated, and also how the gases in the blood may be collected and estimated. 20
3. Describe the nervous mechanism of respiration, pointing out the facts in favour of the theory that the respiratory process is a series of reflex actions. 20
4. Give a full account of the composition and the action of the pancreatic juice. 20
5. Describe a lobule of the liver. Give an account of glycogen. 20

PHYSIOLOGY.

SECOND HONOUR PAPER.

Examiner—S. B. MITRA, Esq., B.Sc., M.B.

The figures in the margin indicate full marks.

1. Give an account of urea, describing its physical and chemical characters, its synthesis, its sources, the place of its formation, and the mode of its secretion. Wherein lies its physiological importance? 20

2. What evidence have we that the several kinds of sensory impulses follow or travel by separate paths in the spinal cord ? 20
3. What evidence have we that the optic fibres are insensible to light ? How is it proved that visual impulses originate in the layer of rods and cones ? What views have been put forward to explain the manner in which the vibrations of light give rise to visual impulses ? 20
4. What views are held with regard to the physiological explanation of sleep ? 20
5. Give a careful account of Flechsig's association areas of the brain. What is Flechsig's view regarding the function of these areas ? 20

PHYSIOLOGY.

THIRD HONOUR PAPER.

(PRACTICAL.)

Examiners— $\left\{ \begin{array}{l} \text{CAPT. D. MCCAY, M.B., B.Ch., B.A.O., R.U.I.} \\ \text{I.M.S.} \\ \text{S. B. MITRA, Esq., B.Sc., M.B.} \end{array} \right.$

PART I.

1. In the urine given estimate :— 40
 - I. The chlorides.
 - II. The urea.
 - III. The total nitrogen.
2. Prepare a solution of methæmoglobin and demonstrate its spectrum. 30
3. Identify and explain orally the apparatus displayed. 30

PART II.

1. Demonstrate the presence of milk-sugar and fat in the milk supplied. 40
2. Demonstrate the effect of strychnine on the animal supplied. 30
3. Identify the microscopic preparations A, B, C, D, E, F, adding a line or two of description. 30

BOTANY.

FIRST PASS PAPER.

Paper-Setters— { I. H. BURKILL, Esq., M.A., F.L.S.
 A. HOWARD, Esq., M.A., F.L.S.
 CAPT. A. T. GAGE, M.B., I.M.S.

Examiner—A. HOWARD, Esq., M.A., F.L.S.

Answers to be illustrated with sketches and diagrams.

The figures in the margin indicate full marks.

1. Name and define two orders amongst the Gamopetalae with inferior ovaries. 20
 2. Describe the various forms of ovule. What terms are applied to the different parts of the seed ? 20
 3. Give an account of the development and microscopic structure of an anther. 20
 4. Describe the influence of light upon the movement of plant organs. 20
 5. What are the chief classes into which the Fungi are divided ? 20
- Mention Fungi by name to illustrate each class.

BOTANY.

SECOND PASS PAPER.

(PRACTICAL.)

Examiners— { I. H. BURKILL, Esq., M.A., F.L.S.
 A. HOWARD, Esq., M.A., F.L.S.

1. Describe in technical language the specimens A. and B. 20
 (Branches of *Passiflora* and *Citrus*.)
2. Briefly describe the flower C. and name its natural order, giving reasons for your opinion. (*Papaver*). 20
3. Cut a thin transverse section of D. Mount it in glycerine. 20
 Briefly describe it and leave a slide for the examiners. (Stem of *Hordrum*.)
4. Make a microscopic examination of E. (conjugating *Spirogyra*). 20
5. Oral examination. 20

BOTANY.

FIRST HONOUR PAPER.

Examiner—A. HOWARD, ESQ., M.A., F.L.S.*Answers to be illustrated with sketches and diagrams.**The figures in the margin indicate full marks.*

1. Give an account of the disease known as Rust in Wheat. 25
2. Describe the inflorescence of a pine, omitting microscopic details. 25
3. What do you know about the continuity of protoplasm in a plant? 25
4. Give an account of the changes in an Angiospermous ovule before and after fertilization. 25

BOTANY.

SECOND HONOUR PAPER.

Examiner—A. HOWARD, ESQ., M.A., F.L.S.*Answers to be illustrated with sketches and diagrams.**The figures in the margin indicate full marks.*

1. How do plants obtain nitrogen, and what do they do with it? 25
2. State how the rate of growth of organs varies, and what circumstances influence it. 25
3. Define three orders in the Monocotyledons, with a superior ovary. 25
4. Give the life-history of *Chara*. 25

BOTANY.

THIRD HONOUR PAPER.

Examiners—{ I. H. BURKILL, ESQ., M.A., F.L.S.
A. HOWARD, ESQ., M.A., F.L.S.

1. Describe in detail the flowers and inflorescence of A. (*Ixora*) and B. (*Iberis*). Refer the plants to their natural orders, giving reasons for your opinion. 40
2. Cut thin sections of the leaves of C. (*Limnanthemum*), D. (*Dischidia*) and E. (*Arundo*). Describe and compare the structure of the three. 40

3. Investigate and describe the structure of *F. (young stem of Mangifera)*. Mount specimens in Canada Balsam, and leave the slides for the examiners. 40
4. Make a microscopic examination of the fungus on *(t. teleutospore stage of Puccinia)*. Leave slides for the examiners, and diagrams to indicate what you have found. 40
5. Oral examination. 40

GEOLOGY.

FIRST PASS PAPER.

Paper-Setters— $\left\{ \begin{array}{l} \text{T. H. HOLLAND, Esq., D.Sc., F.R.S., F.G.S.,} \\ \text{A.R.C.S.} \\ \text{P. N. DATTA, Esq., B.Sc., F.G.S.} \end{array} \right.$

Examiner—P. N. DATTA, Esq., B.Sc., F.G.S.

All the questions are of equal value.

Only EIGHT questions are to be attempted.

1. What is marine denudation? Contrast it with subaerial erosion.
2. Describe fully the action of rain-water on (a) granite, (b) limestone, and (c) sandstone.
3. Give an account of the rocks formed owing to animal agency.
4. Explain the following terms:—Syncline, dip, strike, stratification, crystalline, sedimentary.
5. How would you distinguish between (a) crater eruption and fissure eruption, and (b) between subaerial, lacustrine, and marine eruption? Give examples.
6. Describe the structure and mineralogical composition of the following rocks:—Graphite granite, Eurite, Syenite, Diorite, Peridotite, Trachyte.
7. What is cleavage, and how is it produced?
8. Name the principal groups of marine cretaceous rocks in Southern India, with their chief characteristic fossils, and correlate them with the cretaceous rocks of England.
9. Classify the Jurassic rocks of England, giving some of the characteristic fossils of each sub-division.
10. Give the horizon of the following fossils:—*Trigonia aliformis*, *Ananchytes ovatus*, *Didymograptus Murchisonii*, *Gryphaea arcuata (incurva)*, *Productus semireticulatus*, *Archæopteryx macrura*, *Cidaris florigemma*, *Deinotherium giganteum*, *Avicula contorta*, *Omphyrina turbinatum*, *Bronteus flabellifer*, *Enerinus liliiformis*.

GEOLOGY.

SECOND PASS PAPER.

(PRACTICAL.)

Examiner—T. H. HOLLAND, ESQ., D.Sc. F.R.S., F.G.S.,
A.R.C.S.

The figures in the margin indicate full marks.

1. Name the rocks marked A, B, C and D, giving an account of their mode of occurrence. 20
2. Describe fully the fossils marked E, F, G, H. 20
3. Draw a section along the line $x-y$ across the geological map provided. 20
4. Show graphically how you would determine the amount and direction of true dip from the apparent dips of a bed determined in two stated directions. 20
5. Describe fully the conditions under which specimens J, K, and L were formed. 20

MINERALOGY.

FIRST PASS PAPER.

Paper-Setters— $\left\{ \begin{array}{l} \text{T. H. HOLLAND, ESQ., D.Sc., F.R.S., F.G.S.,} \\ \text{A.R.C.S.} \\ \text{P. N. DATTA, ESQ., B.Sc., F.G.S.} \end{array} \right.$

Examiner—P. N. DATTA, ESQ., B.Sc., F.G.S.

All the questions are of equal value.

Only EIGHT questions are to be attempted.

1. Describe the principal forms, with their main varieties, in which silica (SiO_2) occurs in nature.
2. How would you distinguish between Augite, Hornblende, and Tourmaline?
3. Briefly describe the Amphibole series of minerals.
4. Give the chemical composition of the following minerals, and refer them to their respective crystallographic systems:—Olivine, Orthoclase, Muscovite, Albite, Actinolite, Nepheline, Zircon, Spinel.
5. Explain the following terms:—ophitic, pegmatitic, orbicular, amygdaloidal, fluidal, spherulitic.
6. Give the structure and mineral composition of the following rocks:—Trachyte, Basalt, Peridotite, Diorite, Syenite, Euryte.
7. Fully explain (a) Pseudomorphism. (b) Pleochroism, giving examples.
8. Describe the principal ores containing iron.

9. State what you know of the minerals—Biotite, Microcline, Augite, Leucite, Apatite, Sphene.

10. Explain (a) Isomorphism and (b) Isotropism. Name the substances that are isotropic.

MINERALOGY.

SECOND PASS PAPER.

(PRACTICAL.)

Examiner—T. H. HOLLAND, ESQ., D.Sc., F.R.S., F.G.S.,
A.R.C.S.

The figures in the margin indicate full marks.

- | | |
|---|----|
| 1. Name and describe the minerals marked A, B, C, D. | 20 |
| 2. Draw the crystal-models marked E, F, G, H, giving the name of a mineral which crystallizes in each form. | 20 |
| 3. What is the mineral composition of each of the rocks J, K, L ? | 15 |
| 4. Determine the pleochroism of the minerals in the sections M and N. | 16 |
| 5. Draw and describe the Nicol's prism. | 16 |
| 6. Determine the interfacial angles on the crystal R. | 13 |

MINERALOGY.

FIRST HONOUR PAPER.

Examiner—P. N. DATTA, ESQ., B.Sc., F.G.S.

All the questions are of equal value.

Only EIGHT questions are to be attempted.

1. Explain the terms :—(a) Isomorphism and (b) Pseudomorphism.
2. State accurately what characters would be looked for in the identification of minerals in thin sections under the microscope.
3. Explain the terms micrographic, granulitic, porphyritic, crypto-crystalline, concretionary, hypabyssal.
4. Give a short account of the Gabbros.
5. Explain fully the terms (a) Allotriomorphic and (b) Idiomorphic, giving instances.
6. Describe the rocks :—Serpentine, Rhyolite, Basalt, Syenite.
7. Describe the metasomatism that limestone undergoes.
8. What is dynamic metamorphism ? State briefly what you know about it, giving examples to illustrate your meaning.
9. Describe the mineral forms in which silver occurs in nature.
10. Give the chemical composition, with the crystallographic system, of the following :—
Orthoclase, Augite, Biotite, Psilomelane, Nepheline, Pyrites, Malachite, Albite.

MINERALOGY.

SECOND HONOUR PAPER.

Examiner—P. N. DATTA, ESQ., B.Sc., F.G.S.

All the questions are of equal value.

Only EIGHT questions are to be attempted.

1. Briefly describe the minerals containing manganese.
2. Describe fully the decomposition of (a) granite, (b) basalt, (c) limestone, giving the chemical composition of the original mineral constituents.
3. How would you construct Nicol's prism, and what is its use?
4. Describe the group of Felspars.
5. How would you determine the conditions of solidification of an igneous rock, a thin slice of it being available for examination under the microscope?
6. Give a brief account of the pyroxene series of minerals, mentioning in a tabular form the main differences between the amphiboles and the pyroxenes.
7. How would you distinguish, both macroscopically and microscopically, between (a) quartz and glass, (b) sandstone and quartzite, (c) mica-schist and micaceous slate, (d) orthoclase and oligoclase?
8. Describe the rocks (Granite porphyry, Phonolite, Diabase, and Phyllite).
9. Give the chemical composition, and the crystallographic system of the following:—Stilbite, Microcline, Enstatite, Beryl, Leucite, Alum (potash alum), Bauxite, Boracite.
10. State what you know of the minerals—Opal, Hypersthene, Cassiterite, and Celestine.

MINERALOGY.

THIRD HONOUR PAPER.

(PRACTICAL.)

Examiner—T. H. HOLLAND, ESQ., D.Sc., F.R.S., F.G.S.,
A.R.C.S.

The figures in the margin indicate full marks.

- | | |
|--|----|
| 1. Determine the constituents of the sections A and B. | 14 |
| 2. Describe the minerals marked C, D, E, F. | 20 |
| 3. Draw the crystal-models G, H, giving the name of a mineral which crystallizes in each form. Mark the forms with Miller's indices in the drawings. | 16 |
| 4. Draw a six-faced octahedron, marking the faces with Miller's indices. Draw a positive hemihedral form of this type. | 18 |
| 5. Measure the interfacial angles of the crystal J. | 16 |
| 6. Determine the specific gravity of each of the rock specimens K, L, M, N. | 16 |

Preliminary Scientific M.B. Examination.

1907.

CHEMISTRY.

FIRST HALF.

Examiner—CAPT. J. A. BLACK, M.B., I.M.S.

The figures in the margin indicate full marks.

1. What is meant by *Specific Gravity*? Describe any one method of determining the specific gravity of (1) a *solid*, (2) a *liquid*. Sketch the apparatus required. 70
2. Describe the construction of a *Magneto-electrical machine*, and explain how a *continuous current* can be obtained from it. 70
3. How is *ethyl alcohol* prepared synthetically? Give equations representing the changes that occur in the process. Mention its chief properties, uses, and tests. What are the products of oxidation of ethyl alcohol? 60

SECOND HALF.

Examiner—RAI CHUNILAL BASU BHADUR, M.B., F.C.S.

1. What is *glass*, and how is it manufactured? Mention the different varieties of glass, stating the chief constituents and principal uses of each. How is coloured glass obtained? 60
2. What are the allotropic forms of *Phosphorus*? Describe their preparation and use. How do they differ in their physical and chemical properties? How is *phosphoretted hydrogen* prepared, and what are its chief properties? 60
3. What is the principal ore of *Lead*? How is the metal obtained from it? Give equations expressing the reactions. 80
What is *white lead*, and how is it prepared?
Under what circumstances is *drinking-water* liable to cause *lead-poisoning*?

BOTANY.

FIRST HALF.

Examiner—S. C. MAHALANABIS, Esq., B.Sc., F.R.S.E.

The figures in the margin indicate full marks.

(Illustrate your answers with diagrams where necessary.)

1. Describe fully the characteristics of the Natural Orders Solanaceae and Compositae. 100
2. Give an account of the various methods by which seeds are dispersed. 100

SECOND HALF.

Examiner—A. HOWARD, Esq., M.A., F.L.S.

(Illustrate your answers with diagrams where necessary.)

1. Describe the microscopic structure of (1) a transverse section of the root of a Monocotyledon. (2) a transverse section of a three-year old stem of a Dicotyledon. 100
 2. By what methods other than by means of seeds do plants propagate themselves? 100
- 200 marks reserved for the Oral examination.

COMPARATIVE ANATOMY.

FIRST HALF.

Examiner—DR. N. ANNANDALE, B.A., D.Sc.

The figures in the margin indicate full marks.

1. Describe the life-history of any Protozoan. 70
2. Compare the structure of a Cœlenterate with that of any Invertebrate. 60
3. What do you mean by the following terms :— 70
 - (a) analogy ;
 - (b) homology ;
 - (c) mimicry ;
 - (d) evolution ;
 - (e) degeneration ?

SECOND HALF.

Examiner—S. B. MITRA, Esq., B.Sc., M.B.

1. Give an account of the anatomy of an Ascidian. Where lies the interest of this class of animals to the Zoologist? 100
2. Compare a Reptile with a Bird, carefully noting the agreements and the differences. 100

First M.B. Examination.

1907.

PHYSIOLOGY.

FIRST HALF.

Examiner—BABU GOPALCHANDRA CHATTERJEE, M.B.

The figures in the margin indicate full marks.

1. Describe clearly the vaso-motor mechanism. Describe how 125
the pressure in the vessels of the brain is maintained when a man suddenly stands up from a reclining posture.

2. Describe in minute detail the methods of the estimation of 125
sugar in the urine.

Two methods are to be described.

SECOND HALF.

Examiner—CAPT. D. MCCAY, M.B., I.M.S.

3. (a) What do you know regarding the "doctrine of specific 100
nerve energy" ?

(b) Give a complete account of the physiology of the special
sense of Taste, with a short note on its bearing on the "doctrine of
specific nerve energy."

4. (a) State all you know regarding the paths of the different 150
kinds of sensory impulses in the spinal cord.

(b) What evidence have we of the sensory functions of the
Rolandic area of the cerebral cortex ?

500 marks will be given for the Oral examination.

ANATOMY.

FIRST HALF.

Examiner—MAJOR D. M. MOIR, M.A., M.D., F.R.C.S., I.M.S.

The figures in the margin indicate full marks.

1. Compare the Pelvic-Girdle with the Shoulder-Girdle in man, 100
and the male pelvis with that of the female.

2. State what you know of the stomach, its form, structure and 100
relations.

3. Describe very briefly the Tympanum, or Middle Ear, merely 50
enumerating its contents.

SECOND HALF.

Examiner—BABU JYOTISCHANDRA MUSTAPHI, L.M.S.

1. In what respects does a diarthrodial joint differ from a synarthrodial joint? Give a brief description of the various parts to be found in a typical diarthrodial joint. 100

2. The brain having been removed from the cranial cavity, state the steps of the dissection required to expose a lateral ventricle. Describe the ventricle, and name the structures in its floor *from before backwards*. 100

3. Explain the origin of the uachus, the round ligament of the liver, the fossa ovalis in the right auricle, and the obliterated ductus arteriosus. 50

MATERIA MEDICA AND PHARMACY.

FIRST HALF.

Paper Setters— { LT.-COL. G. F. A. HARRIS, M.D., F.R.C.P.,
I.M.S.
(DR. HEMCHANDRA SEN, M.D.

Examiner—DR. HEMCHANDRA SEN, M.D.

The figures in the margin indicate full marks.

1. Mention the therapeutic uses of Picrotoxin, Eserinae sulphas, Pilocarpinae nitras, Aponorphinae hydrochloridum, Amyl nitris and Thymol. 100

2. Describe the physiological action and therapeutic uses of Arsenious acid. Enumerate its preparations. 100

3. Indicate the methods of employing therapeutic agents in connection with the skin and subcutaneous tissue. Discuss the objects for which these methods are severally used and give examples. 100

SECOND HALF.

Examiner—LT.-COL. F. J. DRURY, M.B., I.M.S.

1. What are expectorants? Classify them and give an example in each class. 100

2. Name the Suppositories of the B.P. giving their composition and strength. What alteration is made in their basis for hot climates? 100

3. What are the B.P. preparations of the Thyroid Gland? What are their therapeutic uses? 100

100 Marks for each question.

200 Marks Oral examination.

200 Marks Practical ..

Written .. 600

Oral .. 200

Practical .. 200

Total .. 1000

Second M.B. Examination.

1907.

MEDICAL JURISPRUDENCE.

FIRST HALF.

Examiner—MAJOR J. C. S. VAUGHAN, M.B., L.M.S.

1. Describe the symptoms and post-mortem appearances of poisoning with Oxalic Acid. 70
2. How does Lightning kill? Describe the post-mortem appearances. What points would you look to in giving an opinion in a case in which the cause of death lay between an alleged criminal infliction of injury and death from Lightning-stroke? 70
3. Name some of the causes of sudden death. How may you account for sudden death where the post-mortem appearances (a) furnish no evidence of the presence of organic disease, (b) where there is clear evidence of the presence of organic disease, which is not however of such a nature as to inevitably cause death, and where there is no evidence of shock. 70

SECOND HALF.

Examiner—RAI DEBENDRANATH RAY, BAHADUR,
L.M.S., V.K.S.

1. A man is poisoned by Dhatura seeds in food, and he dies from the effect of that. What post-mortem signs would you expect to find, and what steps would you take to make the examination complete? 70
2. A person suffering from dementia is drowned, and the body is brought in by the police for medico-legal examination within three hours of death. What post-mortem appearances would you expect to find to support the assigned cause of death and the previous mental condition of the person? 70
3. A newly-born infant is found dead on the road and is alleged to have been murdered— 70
 - (a) What post-mortem signs will corroborate the allegation?
 - (b) What are the signs of live birth?

N.B.—Seventy marks are assigned for each question and 180 marks for the oral examination.

MEDICINE.

FIRST HALF.

Examiner—LT.-COL. C. P. LUKIS, M.D., F.R.C.S., I.M.S.

The figures in the margin indicate full marks.

1. Describe fully the various clinical manifestations of uræmia, 125 and discuss the principles upon which your treatment would be founded with special reference to modern views as regards the pathology of this condition.

2. Describe the ætiology, signs, symptoms and clinical course of 125 a case of Cachexial Fever, mentioning the various complications and discussing their influence upon the progress of the disease. How would you treat such a case ?

SECOND HALF.

Examiner—DR. NILRATAN SARKAR, M.A., M.D.

1. Discuss the pathological conditions leading to each of the 125 different forms of Aphasia, illustrating your answer by schematic representations of the structures and mechanisms concerned.

2. Describe fully the pathology of the production of Hypertrophy 125 and Dilatation of the Heart arising out of different causes.

SURGERY.

FIRST HALF.

Examiner—MAJOR R. BIRD, C.I.E., M.D., F.R.C.S., D.P.H., I.M.S.

The figures in the margin indicate full marks.

1. How is volvulus of the gut caused ? How is the condition 125 dealt with ?

2. Discuss the principles involved in the application of a ligature 125 to a large blood-vessel.

SECOND HALF.

Examiner—DR. SURESPROSAD SARBADHIKARI, M.D.

1. Describe the troubles of an old man, who has fairly entered upon 125 "prostatic life." Upon what pathological conditions do they depend ? What measures would you adopt, if called upon to treat him ?

2. Detail the signs, symptoms and course of events in a case of 125 tubercular disease affecting the body of the 3rd cervical vertebra. What is your plan of management of such a case ?

MIDWIFERY AND DISEASES OF WOMEN.

FIRST HALF.

Examiner—DR. KEDARNATH DAS, M.D.*The figures in the margin indicate full marks.*

1. A woman four months pregnant comes to you with retention of 125 urine. Describe in full the treatment you would adopt.

2. Describe fully the signs and symptoms of a complete rupture 125 of the uterus occurring during the second stage of labour. Give the treatment you would adopt.

SECOND HALF.

Examiner—CAPT. J. C. H. LEICESTER, M.D., B.S.,
B.Sc., F.R.C.S., M.R.C.P., I.M.S.

1. What are the chief causes of death of the infant during the first 100— month after its birth ?

2. What symptoms and signs would lead you to suspect that a 150 woman was suffering from a fibroid tumour of the uterus.

Written .. 500

Oral .. 250

Practical .. 250

N.B.—Your answers should be as concise as possible consistent with accuracy.

PATHOLOGY.

FIRST HALF.

Examiner—DR. SATYASARAN CHAKRABARTI, M.B.*The figures in the margin indicate full marks.*

1. How may throat contents from a suspected case of Diphtheria 75 be collected for bacteriological examination ?

Detail the procedure by which the diagnosis may be confirmed in a bacteriological laboratory.

2. What are Calculi ? 75

How do they generally arise ? Enumerate the more important calculi.

Describe in detail the formation of Gall-stones.

SECOND HALF.

Examiner—CAPT. J. W. D. MEGAW, M.B., I.M.S.

1. What are the conditions which increase or diminish the severity 75 of a disease which results from the entrance of pathogenic bacteria into the human body ?

2. Describe the changes that take place in the skin from the commencement to the full development of an epitheliomatous tumour. 75

75 marks for each question.

Practical .. 200 marks.

Oral .. 100 ..

Books or notes may be used in the practical examination.

HYGIENE (SANITARY SCIENCE).

FIRST HALF.

Examiner —DR. F. PEARSE, M.D., D.P.H.

The figures in the margin indicate full marks.

1. How is the amount of air required for ventilation determined ? 75
Describe some of the means adopted for the ventilation of rooms.
2. Describe briefly the biological method of disposal of sewage. 75

SECOND HALF.

Examiner —BARU HARINATH GHOSH, M.B.

1. Compare the advantages and disadvantages of the different methods for the disposal of dead bodies. 75
2. Describe the methods of disposal of night-soil suitable for a small town other than the water carriage system. 75

Preliminary Scientific L.M.S. Examination.

1907.

CHEMISTRY.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—CAPT. J. A. BLACK, M.B., I.M.S.

1. State *Avogadro's Law*, and explain its use in determining *atomic weights*. 40
2. What happens when an electric current is passed through a solution of *Common Salt*? Describe the experiment, making a rough sketch of the apparatus used. How would you recognise the products of decomposition? 60
3. Explain clearly what is meant by *Empirical formula*, *molecular formula*, and *constitutional formula*, giving examples in illustration of each. 40
4. Explain what happens when the following substances interact, expressing the reactions by equations:— 60
 - (a) *Arsenious Oxide* and *Nitric Acid*.
 - (b) *Caustic Soda* and *Bromine*.
 - (c) *Gold*, *Nitric Acid* and *Hydrochloric Acid*.
 - (d) *Tin* and *Nitric Acid*.
 - (e) *Ethyl Alcohol* and *Sulphuric Acid*.
 - (f) *Methane* and *Chlorine*.

SECOND HALF.

Examiner—RAI CHUNILAL BASU, BAHADUR, M.B., F.C.S.

5. How is *Carbon Disulphide* prepared on a commercial scale? Describe its properties and indicate its principal uses. 70
 - What volume of *oxygen* at N.T.P. would be required for the complete combustion of 1.9 grammes of *Carbon Disulphide*?
6. How would you obtain *copper* from *copper pyrites*? Mention the chief properties of this metal. 80
 - What happens when copper is acted on by *Sulphuric*, *Hydrochloric* and *Nitric Acids*, respectively?
 - How is *Cupric Oxide* prepared, and what is its chief use in the laboratory? Name some of the common *alloys* of copper. What are the tests for copper salts?
7. What is *Oxalic Acid*, and how is it prepared on a commercial scale? Give its properties, tests, and uses. 50

BOTANY.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—S. C. MAHALANABIS, ESQ., B.Sc., F.R.S.E.

(Illustrate your answer with diagrams where necessary.)

1. Explain the terms :—

100

Hypogynous, Zygomorphic, Axile placentation, Scutellum, Farinaceous, Cypsela, Dichotomy, Androphore, Corymb, Endosperm.

2. Give an account of the structure and distribution of root hairs. 100
Of what use are these structures to the plant ?

SECOND HALF.

Examiner—A. HOWARD, ESQ., M.A., F.L.S.

(Illustrate your answers with diagrams where necessary.)

3. Describe the arrangement of the vascular bundles in the transverse section of the young stem of a Dicotyledon. 100

What is bark ?

4. Describe the arrangement of the flowers in the inflorescence of any member of the *Compositae*, and give an account of methods by which pollination is effected in this order of plants. 100

200 marks reserved for the oral examination.

First L.M.S. Examination.

1907.

PHYSIOLOGY.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—ASSTT.-SURGEON GOPALCHANDRA CHATTERJEE, M.B.

1. Describe the structure and functions of the Pancreas. 150
2. Describe the mechanism of deglutition, explaining the action of the several muscles that take part in it. 100

SECOND HALF.

Examiner—CAPT. D. McCAY, M.B., M.Ch., B.A.O.,
R.U.J., I.M.S.

3. (a) Give an account of the structural changes in the uterus during a menstrual cycle. 150
- (b) What views have been put forward to explain the relationship of the ovaries to menstruation?
- (c) Give a careful account of the formation of the foetal membranes.
4. (a) Give a careful account of the results of lesions of the 7th cranial nerve anywhere on its course from the cortex to the periphery. 100
- (b) Point out the practical importance of the different signs resulting from the several lesions, giving an account of their physiological explanation.

500 marks will be given for the oral examination.

ANATOMY.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—MAJOR D. M. MOIR, M.A., M.D., I.M.S.

1. Mention the component parts of a typical vertebra, and compare them in characteristic vertebrae of the cervical, dorsal and lumbar groups. 100

2. Describe the muscles of ordinary and forced respiration, their 100
attachments and nerve-supply.
3. Give a brief account of the tongue, its papillae, muscles, nerves 50
and blood supply.

SECOND HALF.

Examiner—ASSTT.-SURGEON JYOTISCHANDRA MUSTAPHI, L.M.S.

4. Describe the arrangement of lymphatic glands in the follow- 100
ing regions, viz. :—(1) The neck, (2) the axilla, (3) the upper part of
the thigh and the groin, and (4) the popliteal space.
5. Having removed the palmar fascia what structures does the 100
dissector see ?
6. State the mode of origin of a spinal nerve. 50

MATERIA MEDICA AND PHARMACY.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—DR. HEMCHANDRA SEN, M.D.

1. What is Standardizing ? Enumerate the standardized pre- 100
parations of the B.P., mentioning their strengths.
2. Describe the physiological action and the therapeutic uses of 100
Hydrocyanic acid. Name all the drugs which contain hydrocyanic
acid. Enumerate their preparations and doses.
3. Write prescriptions—
- (a) for an intestinal antiseptic ;
- (b) for lowering blood pressure, e.g., in a case of cerebral hae- 100
morrhage.

SECOND HALF.

Examiner—MAJOR B. R. CHATTERTON, M.D., I.M.S.

4. Name the Liquores of the B.P. and give their strength and 100
doses.
5. What salts of Calcium are used in the B.P ? Describe 100
their uses and their preparations.
6. What are the preparations of Hyoscyamus and its alkaloids ? 100
(Give their doses and therapeutical uses.

| | |
|-----------------------------|-------|
| 100 marks for each question | 600 |
| 200 marks for Oral | 200 |
| 200 marks for Practical | 200 |
| | <hr/> |
| | 1000 |

Second L.M.S. Examination.

1907.

MEDICAL JURISPRUDENCE.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—MAJOR J. C. S. VAUGHAN, M.B., I.M.S.

1. Describe fully the manner in which Post-mortem Lividity is produced, and distinguish between post-mortem hypostasis and post-mortem staining. 70
2. Describe the symptoms and post-mortem signs of poisoning with Cyanide of Potassium, and state the fatal dose of the latter. 70
3. What are the distinctive features of lathi wounds of the skull ? 70

SECOND HALF.

Examiner—RAI DEBENDRANATH RAY, BAHADUR,
L.M.S., V.H.S.

4. A woman is said to have been drowned in a tank after an assault. On examining the body you find the ropes of the charpoy on which the body had been carried, "patterned" on the back. What could be the cause of that, and how would you determine the actual facts regarding the cause of death ? 70
5. What are the signs and post-mortem appearances of poisoning with Perchloride of Mercury (Hydrarg: Perchlorid.) ? 70
6. What are the signs of ante-mortem and post-mortem delivery in the mother at eight months' gestation ? 70

N.B.—Seventy marks are assigned for each question and 180 marks for the oral examination.

MEDICINE.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—MAJOR 'F. J.' DRURY, M.B., I.M.S.

1. Describe the signs and symptoms of Pneumothorax. What 125
are the causes of this condition and how would you treat it? Would
your treatment be modified in any way by the cause?

2. Give the aetiology, signs, symptoms and clinical course of 125
Locomotor Ataxy, and state how you would treat such a case.

SECOND HALF.

Examiner—DR. NILRATAN SARKAR, M.A., M.D.

3. Compare the causes, symptoms, complications, sequelae diag-
noses and treatment of gall stones with those of renal stones.

4. Discuss from a diagnostic point of view the different patholo-
gical conditions of which fever of an intermittent type is a common
symptom, and give an outline of the course of treatment required
for each of them.

SURGERY.

FIRST HALF.

The figures in the margin indicate full marks.

Examiner—MAJOR R. BIRD, C.I.E., M.D., M.S., F.R.C.S.,
L.R.C.P., D.P.H., I.M.S.

1. What are the signs, symptoms and treatment of a foreign 125
body retained in the respiratory passages?

2. How and where may surgical emphysema be produced, and 125
how are its complications dealt with?

SECOND HALF.

Examiner—DR. SURESPRASAD SARBADHIKARI, M.D.

3. What do you know of "Pott's Fracture"? How would you 100
treat it?

4. Compare and contrast the signs and symptoms of concussion 150
and compression of the brain after violence, and state how you would
diagnose these conditions from others for which they are liable to
be mistaken: Mention the treatment appropriate to concussion and
compression.

MIDWIFERY AND DISEASES OF WOMEN.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—DR. KEDARNATH DAS, M.D.

1. Give the differential diagnosis between :— 100

- (a) Primary Uterine Inertia.
 (b) Secondary „ „ „ „
 (c) Tonic Contraction of the Uterus.

2. A woman aged 52 complains of irregular hæmorrhages from 150
 the vagina five years after the menopause. What would be the prob-
 able diagnosis ? How would you treat the case ?

SECOND HALF.

Examiner—CAPT. J. C. H. LEICESTER, M.D., B.S.,
 B.Sc., F.R.C.S., M.R.C.P., L.M.S.

3. What do you mean by hydrannios ? How would you diagnose 125
 a case ? Describe fully the treatment you would adopt.

4. Describe the absolute indications for Caesarian Section. Give 125
 in detail an account of how you would perform the operation.

| | | |
|-------------|----|-----|
| Written | .. | 500 |
| Oral | .. | 250 |
| Practical . | .. | 250 |

N.B.—Your answers should be as concise as possible consistent with accuracy.

PATHOLOGY.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—ASST.-SURGEON SATYASARAN CHAKRABARTI, M.B.

1. Distinguish between a thrombus and a post-mortem coagulum. 100
 What are the principal causes of thrombus formation ?
 What are the ultimate changes that a thrombus might undergo ?

2. Describe the changes which follow the division of a mixed 100
 spinal nerve and the process of repair.

SECOND HALF.

Examiner—CAPT. J. W. D. MEGAW, M.B., I.M.S.

3. What changes, local and general, may result in consequence of the entrance of pathogenic bacteria into the human body ? 100

4. What is meant by the widal reaction ? 100

How is it carried out, and what information may you obtain from it ?

100 marks for each question.

200 marks for oral examination.

HYGIENE.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—DR. F. PEARSE, M.D., D.P.H.

1. Describe the diseases brought about by impure food. 75

2. What measures would you adopt for an outbreak of small-pox in a large village ? 75

SECOND HALF.

Examiner—ASST.-SURGEON HARINATH GHOSH, M.B.

3. Describe the various means by which the infectious diseases are communicated. 75

4. Describe the prophylaxis of (a) Plague, (b) Cholera, (c) Malaria, (d) Tuberculosis. 75

Second L.M.S. Re-Examination.

1907.

MEDICAL JURISPRUDENCE.

The FOURTH question in each Half must be answered, and with it, any two of the others.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—MAJOR J. C. S. VAUGHAN, M.B., L.M.S.

1. Give the signs, symptoms and post-mortem appearances of poisoning with Nitric Acid. 50
2. Give the appearances of death by hanging and contrast them with those of death by strangulation. 50
3. A basket of recent human bones is brought to you. What examination would you make to determine the sex and age of the deceased? 50
4. What are the signs of defloration in a girl of 16 years of age? 100
How would you argue for and against the question of rape in a girl of that age?

SECOND HALF.

Examiner—RAI DEBENDRANATH RAY, BAHADUR, L.M.S.,
V.H.S.

1. What are the signs, treatment, fatal dose and post-mortem appearances of Dhatura poisoning? 50
2. How would you distinguish an ulcer in the stomach from post-mortem digestion? 50
3. How would you distinguish a deep incised wound inflicted during life from one inflicted, say an hour after death? 50
4. Two fresh bodies are brought in for post-mortem examination 100
—one is said to have died from having been buried accidentally from a fall of loose earth, the other from having been throttled. By what post-mortem appearances would you distinguish one from the other, and determine the cause of death?

MEDICINE.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—MAJOR F. J. DRURY, M.B., I.M.S.

Only TWO of the following three questions to be answered.

1. What are the causes of Epilepsy? Describe an epileptic fit.
2. What are the most recent views as to the mode in which the infection of plague is communicated? What would be your treatment of a case of Bubonic Plague?
3. Describe the symptoms of Beriberi, its pathology and causation. What varieties are described?

125 marks for each of the two questions answered.

| | | | |
|-----------|----|----|-----|
| Oral | .. | .. | 250 |
| Practical | .. | .. | 250 |

SECOND HALF.

Examiner—DR. NILRATAN SARKAR, M.A., M.D.

Only TWO questions are to be answered.

1. What are the different varieties of Cirrhosis of the Liver? 125
(Give a clinical account of a case of Alcoholic Cirrhosis of the Liver.)
2. Describe the clinical diagnosis of a case of bronchiectasis. 125
3. Discuss the clinical importance of blood in the urine, in the 125
aspects of (a) diagnosis, (b) prognosis, (c) treatment.

SURGERY.

The figures in the margin indicate full marks.

Time—3 hours.

FIRST HALF.

Examiner—MAJOR R. BIRD, C.I.E., M.D., M.S., F.R.C.S.,
D.P.H., I.M.S.

Two questions to be answered.

1. Give the full differential diagnosis of an early epitheliomatous 125
ulcer of the tongue.
2. Under what conditions do you advise surgical interference 125
during the progress of a case of appendicitis.
3. Discuss the treatment of penetrating wounds of the skull. 125

SECOND HALF.

Examiner—DR. SURESPRASAD SARBADHIKARI, M.D.

1. What do you know about Dislocations of the Hip Joint ? 125
2. What are the different causes of "Hæmaturia" as met with 125
in surgical practice ? Discuss the question of Diagnosis in these
cases and briefly indicate the line of treatment in each class of cases.

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|--------------------|----|-------|
| Paper | .. | 500 |
| Oral and Practical | .. | 500 |
| Total | .. | 1,000 |

MIDWIFERY.

Only TWO questions in each part are to be attempted, of which No. 2 in the First Half must be answered by all students.

Your answers are to be as short as possible consistent with accuracy.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—DR. KEDARNATH DAS, M.D.

1. Give the chief causes of delay in the second stage of Labour. 125
and give as fully as possible the appropriate treatment in each case.
2. A woman known to be four months pregnant gets all the symp- 125
toms of a threatened abortion. These, however, subside without
anything being expelled from the uterus except a blood discharge.
The signs and symptoms of pregnancy then disappear, with the ex-
ception that the uterus remains enlarged and menstruation does not
return. Give your diagnosis and treatment of the case.
3. Tabulate the causes and symptoms, and give in detail the 125
treatment, of Puerperal Parametritis.

SECOND HALF.

Examiner—CAPT. J. C. H. LEICESTER, M.D., M.R.C.P.,
F.R.C.S., I.M.S.

1. What do you mean by Inversion of the Uterus ? How many 125
varieties are there ? What is the appropriate treatment of each
variety ?
2. Give the signs, symptoms and treatment of an Ovarian Cyst. 125
3. Give briefly the pathology, symptoms and treatment of Pyo- 125
salpinx.

| | | |
|-----------|----|------------|
| Paper | .. | 500 marks. |
| Oral | .. | 250 .. |
| Practical | .. | 250 .. |
| Total | .. | 1,000 |

PATHOLOGY.

Two questions only are to be answered from each half of the paper.

The same number of marks is allotted to each question.

FIRST HALF.

Examiner—ASST.-SURGEON SATYASARAN CHAKRAVARTI, M.B.

1. How may the diagnosis of a case of suspected Cholera be confirmed in the laboratory ? Describe the post-mortem appearances to be met with in Cholera.
2. What is a Gumma ? Describe its structure. What are its sites ? Is a gumma an infective lesion ? What are its terminations ?
3. What is Immunity ? Distinguish between active and passive immunity. What are the recognized methods of obtaining immunity ? Give examples.

SECOND HALF.

Examiner—CAPT. J. W. D. MEGAW, M.D., I.M.S.

1. Write a short note on Suppuration.
2. Give an account of the Ankylostoma Duodenale, including the pathological changes to which it may give rise in man, and the means by which its presence may be detected.
3. Contrast, with the aid of diagrams, the microscopical appearances of the various kinds of Sarcomata.

Write a note on the relative malignancy of the varieties described.

| | | |
|---------|----|---|
| Written | .. | 400 Marks (200 for each half of the paper). |
| Oral | .. | 200 „ |

HYGIENE.

FIRST HALF.

Examiner—BABU PRANDHAN BASU, M.B.

Candidates are at liberty to answer any TWO of the following questions.

The figures in the margin indicate full marks.

1. Discuss the different sources of infection in typhoid fever and 100 explain why persons suffering from diarrhoea, or otherwise in different health, are less capable of resisting the contagion.
2. Compare rivers and wells as sources of drinking-water. Describe accurately an Artesian Well. 100

3. Give the average composition per 100 parts of— 100

- (1) Human milk.
- (2) Cow's milk.
- (3) Goat's milk.
- (4) Buffalo's milk.
- (5) Ass's milk.

What is butter ? Give the percentage proportion of its constituents.

4. Describe the process of vaccination, and the symptoms that 100 will enable you to judge of its success in any given case.

SECOND HALF.

Examiner—ASST.-SURGEON HARINATH GHOSH, M.B.

Candidates can select any TWO questions making up total marks 200.

1. Give the characteristic features of mountain-climate and of 100 the atmosphere of mines. State their effects on health.

2. What are prevalent causes of infant mortality in India ? Sug- 90 gest your measures to remedy the same.

3. Describe briefly the more common kinds of food-poisoning that 110 we meet with. What measures would you suggest to prevent their occurrence ?

4. Enumerate the disinfectants in common use. How would you 90 disinfect valuable books that cannot be destroyed ? Describe disinfection of wells.

First Examination in Engineering.

1907.

MATHEMATICS.

FIRST PAPER.

COMPUTATIONS AND MENSURATION.

Examiner—DR. C. E. CULLIS, M.A., PH.D.

The figures in the margin indicate full marks.

1. Employ contracted methods of multiplication and division to calculate the value of b from the formula 40

$$p = \frac{.003681 T}{r-b} - \frac{.00734}{(r-.00044)^2},$$

firstly when $p=75$, $T=308$, $r=.00680$, and secondly when $p=100$, $T=373$, $r=.01030$, the values of the decimal fractions being approximate and correct only as far as the figures given.

2. Find, without the use of logarithms, the sum which will amount to Rs. 1,000 in 6 years at $3\frac{1}{2}$ per cent. per annum compound interest, when interest is payable every half-year. 40

3. Define the logarithm of a number to any base and prove that 40

$$\log_a x^n = n \log_a x.$$

Evaluate

$$a^{\frac{2}{3}} b^{\frac{5}{8}} (a+b)^{-\frac{7}{3}} (a-b)^{\frac{1}{2}}$$

when $a=.477121$, $b=.301030$.

4. Find (without using the logarithmic tables) the angle A and the number x , having given 40

| | |
|---|--|
| $\log \sin A = \bar{1} \cdot 8379961,$ | $\log \cos 54^\circ 17' 24'' = x$ |
| $\log \sin 43^\circ 31' = \bar{1} \cdot 8379453,$ | $\log \cos 54^\circ 17' = \bar{1} \cdot 7662473$ |
| $\log \sin 43^\circ 32' = \bar{1} \cdot 8380783,$ | $\log \cos 54^\circ 18' = \bar{1} \cdot 7660715$ |

5. Two forts P and Q are observed from two stations A and B , 1350 yards apart, and it is observed that the angles PAR , QAB , PBA , and QBA are respectively 108° , $43^\circ 12'$, $32^\circ 10'$ and $87^\circ 12'$. Calculate the distance between the forts. 50

6. Sketch a plan and calculate the area of a field $ABCDEFG$ from the following notes, in which the distances are given in yards:— 40

| | | | | |
|---|----|-----|----|---|
| | | D | | |
| | | 207 | | |
| E | 94 | 196 | | |
| | | 123 | | |
| F | 62 | 117 | | |
| G | 12 | 85 | | |
| | | 61 | | |
| | | A | | |
| | | | | |
| | | | 12 | C |
| | | | 72 | B |

7. The area of an equilateral triangle is 17320.5 square feet. About each angular point as centre a circle is described with radius equal to half the length of a side of the triangle. Find the area of the space included between the three circles. 40

8. It is required to construct an iron cylindrical pipe, 12 feet in internal diameter, whose weight shall be equal to that of the water which would fill it if its ends were closed. Find the thickness of the iron, it being known that iron is 7.76 times as heavy as water. 40

9. A triangle whose sides are 3.4, 9.8 and 12.3 feet in length rotates about its smallest side. Find the surface and value of the figure so formed. 40

10. Find the capacity in gallons of a reservoir 20 feet deep, the top of which is a rectangle 60 feet long and 40 feet broad, and the sides of which shelve inwards at the rate of 1 foot horizontal to 2 feet vertical. a cubic foot of water containing $6\frac{1}{4}$ gallons. 35

MATHEMATICS.

SECOND PAPER.

ALGEBRA. TRIGONOMETRY AND ANALYTICAL GEOMETRY.

Examiner—DR. C. E. CULLIS, M.A., PH.D.

The figures in the margin indicate full marks.

1. Sum to n terms the series : 40

$$(i) \quad 1.2.3. + 2.3.4. + 3.4.5. + \dots$$

$$(ii) \quad 12 + (12 + 22) + (12 + 22 + 32) + \dots$$

A pyramid of balls stands on an equilateral triangle as base, having 32 balls in each side. How many balls are there in the pyramid ?

2. Express as the sum of partial fractions : 40

$$(i) \quad \frac{x^2 + 4}{(x+1)^2 (x-2) (x+3)}$$

$$(ii) \quad \frac{4x^4 - 15x^3 + 40x^2 - 46x + 3}{(x-2) (x^2 - 2x + 5)^2}$$

3. Find the values of 40

$$(-1 + i\sqrt{3})^{\frac{1}{2}}$$

and give a geometrical representation of them.

Express $x^6 + a^6$ as the product of three real factors.

4. Prove that 40

$$\cos \theta + i \sin \theta = e^{i\theta}.$$

Express $\sin 7\theta$ in terms of first powers of $\sin \theta$, $\sin 3\theta$, $\sin 5\theta$, $\sin 7\theta$.

5. Sum the series :

40

- (i) $\cos \alpha + \cos(\alpha + \beta) + \cos(\alpha + 2\beta) + \dots$ to n terms ;
 (ii) $\sin \alpha \sin 2\alpha + \sin 2\alpha \sin 3\alpha + \sin 3\alpha \sin 4\alpha + \dots$ to n terms ;
 (iii) $x \sin \alpha + \frac{x^2 \sin 2\alpha}{2!} + \frac{x^3 \sin 3\alpha}{3!} + \dots$ to infinity.

6. Find the area of a quadrilateral when the rectangular Cartesian coordinates of its angular points are known. 40

The rectangular coordinates of the angular points of a quadrilateral are $(-2, 1)$, $(4, -2)$, $(-1, 5)$ and $(3, 6)$. Draw a figure of the quadrilateral and determine its area.

7. Find the perpendicular distance of the point (x', y') from the straight line $ax + by + c = 0$. 40

Find the equations of all common tangents of the two circles

$$x^2 + y^2 + 2x = 0, \quad x^2 + y^2 - 6x = 0.$$

8. Prove that there is one normal to the parabola $y^2 = 4ax$ which is parallel to the straight line $y = mx$, and find its equation. 40

A normal is drawn to the above parabola from the point $(6a, 0)$; prove that its length is $2\sqrt{5}a$.

9. Find the equation of the polar of any point (x', y') with respect to the ellipse 40

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1.$$

Find the pole of the straight line $y = m(x - \alpha)$ with respect to this ellipse, α being its eccentricity. What geometrical property of the ellipse can be deduced from the result ?

10. Define the asymptotes of the hyperbola

40

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1,$$

and determine their equations. Show that the asymptotes are self-conjugate diameters.

If a diameter of a hyperbola meets the hyperbola in P , and if the conjugate diameter meets the conjugate hyperbola in D , prove that the tangents at P and D meet on an asymptote.

MATHEMATICS.

THIRD PAPER.

STATICS AND DYNAMICS.

Examiner—C. LITTLE, Esq., M.A.

The figures in the margin indicate full marks.

1. Prove that the space passed over in a given time by a body moving with uniformly accelerated velocity is the same as the space 40

which it would pass over in the same time if it moved uniformly with the velocity which it had at the middle point of its motion.

A body A is moving with uniform velocity u in a straight line, and another body B moves from rest with a given acceleration f along the same straight line, being initially at a distance a behind A . Find when and where B will overtake A .

2. Explain, with illustrations, what is meant by the theorem called the *parallelogram of velocities*; and show how it may be proved. 40

A car is moving with a velocity of 12 miles an hour. If a man steps out of it with a velocity of 4 feet per second with his back to the direction of motion and making an angle of 30° with that direction, find in what direction he will have a tendency to fall.

3. A body slides down an inclined plane from rest and after leaving the plane continues to move freely through a height the same as that of the inclined plane. Compare the horizontal displacement in the two stages of motion. 40

4. A particle moves uniformly in a circle, find the necessary force towards the centre of the circle. 40

If a railway carriage without flanges on its wheels move in a circular curve, show how the effect of the centrifugal force may be counteracted by a rise of the outer rail. Find what the rise of the outer above the inner rail should be if the radius of the circle be 1320 feet, the velocity of the train 30 miles an hour and the distance between the rails 5 feet.

5. A body whose mass is m lbs. is attached to a string passing over a smooth pulley and fastened at the other end to a body of m' lbs. lying on a table, the line joining m' and the pulley being inclined at an angle α to the vertical. If the string be at first slack, and become stretched after m has fallen through one foot, find the impulsive tension of the string, and the velocity then imparted to m' . 40

Prove that the acceleration of m directly after the string becomes stretched is

$$\frac{m - m' \cos \alpha}{m + m'} g,$$

if the angle α be prevented from changing.

6. Find the conditions of equilibrium of a system of forces in one plane; and show that if not in equilibrium the system may be reduced in some cases to a single force, in others to a couple. 40

A uniform beam AB of given length and weight has its extremity A resting in a smooth horizontal groove AC and its extremity B in a smooth vertical groove BC , and it is kept in equilibrium by a string CD fixed to a given point D in the beam. Find the tension of the string and the limits as to the length and point of attachment of the string for which equilibrium is possible.

7. Find the centre of gravity of a pyramid on a triangular base, and prove that its position coincides with the centre of gravity of four spheres of equal weight having their centres at the four angles of the pyramid. 40

8. Determine the relation between the power P and the resistance Q in a screw press and with a rectangular thread of small breadth, if the coefficient of friction between the thread of the screw and the groove in which it runs is μ . 40

9. What is meant by *impulse*? Explain how impulse is used in the investigation of problems of impact. Give an expression for the magnitude of the impulse in the case of a mass m having a velocity u before and a velocity u' after impact. 40

Find the loss of kinetic energy in direct impact between two imperfectly elastic spheres in terms of the masses and the velocities before impact.

10. What is meant by the gravitation unit and the dynamical unit of work? Compare their magnitudes. 40

By the use of the principle of work, find the velocity of a body which has fallen through a distance h under gravity, the initial velocity being u .

A cannon ball of weight 10 lbs is fired horizontally with a velocity of 1120 feet per second from a gun whose weight, with its carriage, is 5 tons. Find in foot pounds the kinetic energy of the gun immediately after the explosion.

• MATHEMATICS.

FOURTH PAPER.

DIFFERENTIAL AND INTEGRAL CALCULUS.

Examiner—C. LITTLE, ESQ., M.A.

The figures in the margin indicate full marks.

1. Prove the rule for the differentiation of a product of any number of functions: and give an example of your own in illustration. 30

Differentiate—

$$(1) (1+x^2)^n \tan^{-1}(m \sin x),$$

$$(2) \frac{\cos x - \sin x}{\cos^2 x}.$$

$$(3) e^{ax} \sin rx.$$

2. What is meant by successive differentiation? Find the third successive differential coefficient of the third function in the previous question, and show how the differentiation of that function may be readily carried on any number of times. 40

If $y = \sin(m \sin^{-1} x)$
prove that

$$(1-x^2) \frac{d^2y}{dx^2} - x \frac{dy}{dx} + m^2 y = 0.$$

Apply Leibnitz's theorem to prove that

$$(1-x^2) \frac{d^{n+2}y}{dx^{n+2}} - (2n+1)x \frac{d^{n+1}y}{dx^{n+1}} + (n^2-m^2) \frac{d^ny}{dx^n} = 0.$$

3. If y be expressed as an implicit function of x show how the differential coefficient of y with respect to n may be found. Apply the method to find $\frac{dy}{dx}$ from the equation 35

$$x^3 + y^3 - 3axy = 0.$$

4. If u be a homogeneous function of x, y, z of the n^{th} degree, 35
prove that

$$x \frac{du}{dx} + y \frac{du}{dy} + z \frac{du}{dz} = nu.$$

If $u = ax^2 + by^2 + cz^2 + 2fyz + 2gzx + 2hxy$, find the relation between the constants a, b, c, f, g, h in order that the equations

$u = 0, \frac{du}{dx} = 0$, and $\frac{du}{dy} = 0$ may be satisfied by the same values of x, y, z .

5. Prove Maclaurin's theorem; and apply it to find the expansion 40
of $\sin x$ in ascending powers of x to the third term.

6. What is meant by an undetermined form? Enumerate the 35
more important cases.

Find the value of

$$(1) \frac{2 \tan x - \tan 2x}{3 \tan x - \tan 3x} \text{ when } x = 0.$$

$$(2) (\tan x)^{\sin x} \text{ when } x = 0.$$

7. Investigate the conditions for a maximum or minimum value 40
of a function of one variable, and show that maximum and minimum values occur in pairs.

Determine what maximum and minimum values of y occur as x varies from $-x$ to ∞ , the relation between x and y being given by the equation $x^3 + y^3 - 3axy = 0$.

8. Find the equations of the tangent and normal at any point of 35
the curve $y = f(x) = 0$.

Find the length of the normal, at any point of the curve

$$y = \frac{c}{2} \left(e^{\frac{x}{c}} + e^{-\frac{x}{c}} \right),$$

intercepted between the curve and the axis of x . Also prove that the length of the perpendicular on the tangent from the foot of the ordinate is constant.

9. Show how to find the value of the following standard forms 35
of integration:—

$$(1) \int \frac{dx}{\sqrt{a^2 - x^2}},$$

$$(2) \int \frac{dx}{a + bx + cx^2}$$

$$(3) \int \frac{dx}{a + b \cos x}.$$

$$(4) \int \sec^2 x \, dx.$$

10. If

$$U = ax^2 + 2bx + c$$

and

$$A = (x - f) / (Ax^2 + 2Bx + C)$$

when $x - /$ is the only simple factor in V , show how the integral $\int \frac{U}{V} dx$ may be determined.

11. Find

- (1) the area of the ellipse $ax^2 + by^2 = 1$;
- (2) the centre of gravity of the area included between the curves $y^2 - 4ax = 0$ and $x^2 - 4ay = 0$;
- (3) the moment of inertia of a sphere about a diameter.

GEODESY.

Examiners— { AMARNATH DAS, ESQ., B.E.
P. W. BYERS, ESQ., L.C.E.

The figures in the margin indicate full marks.

(Candidates shall give their answers in their own words as far as practicable).

1. How would you find the bearing of a line, the ends of which are not visible from each other ? 20
2. On a given map, a rectangular field whose sides are $8'' \times 10''$ has an area of 33.8 bighas. Draw the scale and subdivide to show yards and diagonally feet. (1 bigha = 1600 sq. yds.) 30
What is the representative fraction ?
3. Draw a rough sketch of the field $ADBEFCA$ from the following field book, and calculate its area. 25

| | | | |
|-----------|------|-------|-----------|
| | To | ⊙ F | |
| | | 1280' | |
| | | 960' | 280' to C |
| | | 400' | |
| To E 470' | Turn | to | the right |
| | From | ⊙ B | |
| | To | ⊙ B | |
| | | 1120' | |
| To D 60' | | 600' | |
| | | 320' | 600' to C |
| | From | ⊙ A | go west |

4. How would you test the collimation of (1) the Dumpy Level and (2) the Y level. 20
5. Make the necessary calculations and explain how a 4° curve is laid out ; angle of deflection = $28^\circ 36'$. ($\tan 14^\circ - 18' = 0.254908$). 30
How would you find points at every 50 ft. on the curve ?
6. Sketch and describe a clinometer ; how would you use it in laying out the formation level of a hill road ? 25
7. What is the practical use of a contoured survey and how would you conduct such a survey ? 25
8. Describe the nature of survey operations required for ascertaining the discharge of a running stream. 25

MATERIALS OF CONSTRUCTION.

Examiners-- { B. HEATON, ESQ.
RAI KRISHNACHANDRA BANERJEE, BAHADUR,
B.A.

The figures in the margin indicate full marks.

1. Name some of the localities from which the principal building stones used in Bengal are obtained. Give the characters by which the following stones are distinguished from one another :—(1) syonite, (2) green-stone, (3) quartz, (4) sand-stone, (5) clay slate, (6) magnesian limestone, (7) trap, (8) laterite. 50

State what advantages nos. 1, 4, 5, and 8 have for certain building purposes.

2. How would you proceed to drive a hole in rock for blasting purposes, and how is it tamped generally? What is meant by the line of least resistance? How will you determine the quantity of powder required for blasting, if dynamite be not available for the work? 40

3. Give a brief description of the method of burning bricks in a Bull's kiln with necessary *sketches*. From the point of view of a brick contractor what advantages or disadvantages are there in adopting Bull's method of burning as compared to clamp burning? 50

4. Given a plot of land with one side abutting on a river or railway, show by sketches how you would lay out the land for brick-making operations. 40

5. Give a section of a perpetual lime kiln. State the proportion of coal used and the probable outturn per 100 cft. of limestone. 50

6. If you are required to select out of 4 or 5 different samples of Portland cement, state what tests you would adopt in order to determine which is the best. Give reasons for your answer. 50

7. What is the proper time for felling trees for timber and why? Describe what you know to be the most satisfactory method of preserving timber. 50

8. Describe the process of manufacturing cast-iron from the ore. 50

9. What is Bessemer steel? Describe the process of its manufacture. 50

10. How are the following substances prepared :— 50

Litharge, red lead, white lead, zinc white and lamp black?

What are dryers and what are they composed of?

How is priming prepared? What is the method of boiling linseed oil? Give the ingredients with proportions of a good varnish.

CHEMISTRY.

Paper set by—W. TATE, ESQ., A.R.C.S., F.C.S.

Examiner—RAI CHUNILAL BASU, BAHADUR, M.B., F.C.S.

The figures in the margin indicate full marks.

1. What is Dulong and Petit's Law? Show clearly its use in the determination of atomic weights. 24

2. How is carbon dioxide obtained in the liquid and solid states respectively ? Describe the properties of the liquid and trace, with the help of a curve, the changes produced in it when under a constant pressure of say 70 atmospheres, the temperature is gradually raised from 0° to 40° . 24
3. Show the connection between the vapour pressure and osmotic pressure of a solution. 25
4. Enumerate the metals of the alkalis, give the general characters of the group, and show that the members of this group may be ranged in two subdivisions. 24
5. Describe the action of the following agents upon metallic Zinc :— 25
 - (a) Aqueous hydrochloric acid ;
 - (b) Undiluted oil of vitriol ;
 - (c) Dilute sulphuric acid ;
 - (d) Dilute sulphuric acid with a drop of copper sulphate solution ;
 - (e) Solution of caustic potash.
6. If you were supplied with a solution of phosphoric acid how would you proceed to prepare specimens of the three sodium phosphates ? Write equations showing the action of a solution of silver nitrate upon each. 24
7. How would you prepare specimens of pure copper, aluminium, silver, and mercury from the commercial articles. 24
8. Describe the process of manufacturing red lead, Portland cement, and tin plate. 30

PRACTICAL CHEMISTRY.

Examiners— $\left\{ \begin{array}{l} \text{W. TATE, Esq., A.R.C.S., F.C.S.} \\ \text{J. A. CUNNINGHAM, Esq., B.A., F.C.S.,} \\ \text{A.R.C.S.I.} \end{array} \right.$

The figures in the margin indicate full marks.

1. Determine the weight of sodium chloride in the solution given in bottle A by precipitating as silver chloride and weighing the precipitate. 60
2. Make a qualitative analysis of each of the substances B and C and write out your procedure and results in tabular form. 60
3. Fit up an apparatus for the production of dry hydrogen chloride and its collection in a flask of about one litre capacity. 20
4. Produce the note-books of the Practical work carried out by you in the Chemical Laboratory. 60

PHYSICS.

FIRST PAPER.

THEORY OF LIGHT, HEAT, ELECTRICITY AND
MAGNETISM.

Examiners—{ C. W. PEAKE, Esq., M.A.
P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.

Only six of the questions are to be answered.

The same value is attached to each of the questions.

The candidate must answer at least one question belonging to each of the four main subjects.

1. Explain the conditions under which two simple harmonic vibrations along two lines at right angles to one another will combine together to give (1) rectilinear, (2) elliptical, and (3) circular vibrations.

2. Describe any form of mercury barometer with which you are acquainted.

A barometer with a brass scale reads 75·70 centimetres at a temperature of 12°C. What will be the reading reduced to 0°C? The coefficient of linear expansion of brass is 18×10^{-6} and the coefficient of cubical expansion of mercury is 18×10^{-6} .

3. Describe fully Hofmann's or Victor Meyer's method of determining the vapour densities of liquids.

4. Give some account of Regnault's and Roentgen's experiments to determine the rates of the specific heats of a gas at constant pressure and constant volume, explaining carefully the theory of the method by the help of a diagram.

5. Write a short essay on the passage of electricity through gases.

6. A current of one ampere flowing for one second through a resistance of 1 ohm produces 239 gram-centrigade units of heat. What current would have to flow for an hour through a resistance of 41·84 ohms, in order that the heat produced might suffice to raise a kilogram of water from 0°C to the boiling point?

7. Describe some method of comparing the E.M.F. of two cells without using an electrometer.

8. Explain fully how the magnetic dip at any point on the earth's surface can be measured, shewing how the various errors to which the method is liable can be eliminated.

9. Two thin lenses of focal lengths f_1 and f_2 respectively are placed with their axes coincident at a distance a from one another, a being less than the focal length of either of them. What is the focal length of the combination?

10. Find the general formulae for the refraction of an axial pencil of light at a spherical surface. Hence deduce the lens formulae for a convex-plane lens.

11. Find an expression for the work done by a perfect gas during (a) an isothermal expansion, (b) during an adiabatic expansion. If the temperature of a volume of gas is 30°C, what will its temperature be, if it is compressed adiabatically to half its original volume?

12. A galvanometer 7500 ohms resistance is short circuited by a resistance of 65 ohms. The main circuit contains a resistance of 1·5 meg-ohms and a battery of an electromotive force of 3·8 volts. The remaining resis-

tances are negligibly small. What current flows through the galvanometer? What is the joint resistance of galvanometer and shunt?

13. Trace the analogies between electric and magnetic circuits. What is magnetic permeability? Explain some method of measuring it.

PHYSICS.

SECOND PAPER.

APPLIED PHYSICS.

Examiners—{ C. W. PEAKE, ESQ., M.A.
P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.

The questions carry equal marks.

The candidate is directed to answer either part (a) or part (b) of each question. Sketches must be drawn in pencil. Great attention must be paid to cleanliness and neatness in writing and sketching.

1. (a) For the purpose of controlling the working of a number of glass smelting furnaces from a central office you require to know the temperature of any of the furnaces at any moment. Sketch out a working plan of the arrangement you would adopt, and describe the thermometer which you would use.

(b) Give a short account of the construction and working of any oil-engine with which you are acquainted. You may confine yourself to drawing an outline sketch and giving an index of parts.

2. (a) State the laws on which photometry is based. Describe and sketch Lummer-Brodhun's screen.

(b) Trace the path of a pencil of light coming from a distant object through the telescope of a theodolite.

3. (a) Explain the construction, action, and use of Siemens' relay.

(b) How would you test the earth of a lightning conductor?

4. (a) Write short notes on the construction and functions of armatures and field-magnets.

(b) Classify dynamo-electrical machines with respect (1) to the use to which they are put, (2) to the kind of current which they produce or use.

5. (a) Give a short description of any storage cell; explain what chemical reactions take place during charge and discharge, and state what precautions must be taken to protect a storage battery from deterioration.

(b) You want to utilise the power of a waterfall to supply light and mechanical energy to a town fifty miles distant. State concisely what means you would adopt to attain your aim.

6. (a) What is the best material for (1) lightning conductors, (2) the cores of armatures, (3) the carcass of dynamos, (4) telegraph lines, (5) the resistance coils of Wheatstone's bridges? Give reasons for your statements.

(b) Under what conditions do you instal arc lamps and incandescent lamps respectively? How do you arrange them in circuit? What kinds of dynamos do you use in arc-lamp and in incandescent lamp circuits respectively?

PRACTICAL PHYSICS.

Examiners— { P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.
 { C. W. PEAKE, ESQ., M.A.

The candidate will do one of the following tasks. The experiment is to be repeated a sufficient number of times to allow of the probable error being ascertained. Special attention will be paid to neatness and method shown in the experimental arrangements and the working up of the results. Marks will be deducted for badly-drawn sketches and for bad handwriting. In working out numerical results the shortest and most ready methods must be adopted.

1. Work out curves which represent the electromotive force of a Daniell's cell as a function of the concentration of the sulphuric acid and of the copper sulphate.

2. Using the shunt method find the law of the given galvanometer. Represent the scale readings and the angular deflections as functions of the galvanometer current.

3. By the use of any method you may choose find out whether the given galvanometer follows the tangent law. Having ascertained the law of the galvanometer, work out the electromotive force of the given copper-constantan and the given copper-zinc couple as a function of the difference of temperature of the hot and cold junctions. Represent the results of your experiments by curves.

4. By the meter bridge method compare all the ten-ohm resistances with the given standard resistance. Make some determinations to ascertain whether the calibration table supplied to you is correct. Correct for end contact, adventitious thermoelectric effects, and tapping error.

5. Ascertain the resistivity of the material of the given wire. Find the diameter of the wire by direct measurement and by the specific gravity method. Make corrections for all the errors to which the meter bridge method is liable. Instead of using a standard meter bridge a Kelvin's Double Bridge may be made use of.

6. Verify the fixed points of the given thermometer as carefully as possible. Also verify the boiling-point of the hypsometer thermometer, and determine the height of a building by means of a hypsometer. Verify your result by a theodolite.

7. Subject the given liquid to fractional distillation and determine the boiling-points of the different fractions. Also determine the melting-points of the four different samples of paraffin as accurately as possible.

8. Adjust the cathetometer, and make use of it to determine the coefficient of expansion of the given metallic rod and the coefficient of elasticity of the given wire.

9. Verify Boyle's law in the case of dry air and dry carbon dioxide. Ascertain the errors inherent in the apparatus with which you work, and represent the results of your experiments by curves.

10. Determine the focal lengths of the concave lenses A, B, and C by a photometric method. By trial find the position of the maximum dispersive effect of a concave lens. Verify the focal length determination by any other method in the case of at least one of the three lenses.

11. Determine the index of refraction of the substance of the given prism by the spectrometric method, carefully working out the probable error. Find the index of refraction of the substance of the given lens by spherometric measurements and determinations of conjugate focal distances.

12. Using a Kohlrausch's Total Reflectometer with certain auxiliary parts determine the index of refraction of the given prism of fluorite (a) by the spectrometric, (b) by the total reflection method, (c) by the method of the angle of maximum polarisation.

13. Using a Zeiss' stage micrometer as a standard, determine the average value of an interval of the drum division of the given comparator microscopes, and test the screw of the longitudinal dividing machine for accuracy. Also measure as accurately as possible the effective length of the given polarimeter tube and compare the result thus obtained with that obtained by using the given polarimeter tube gauge.

14. Determine as accurately as possible the specific heats of the two given metals and ascertain the limits within which they satisfy Dulong and Petit's rule of atomic heats.

DRAWING.

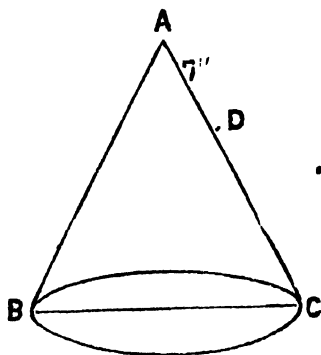
Examiners—{ SURENDRAKUMAR BOSE, Esq., B.C.E.
B. G. GWYTHYER, Esq.

The figures in the margin indicate full marks.

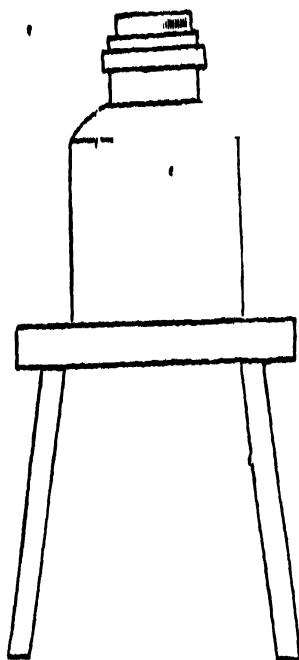
1. A sphere 2" diameter rests on the ground with its centre c $1\frac{1}{2}$ " 35
from the vertical plane. Determine a sphere $1\frac{3}{8}$ " diameter to touch
the given one at a point P whose plan p is $2\frac{1}{8}$ " from the ground line and
 $\frac{1}{2}$ " to the right of c .

2. Construct a scale of 23ft. = 1" to show poles, yards and diagonally 20
feet.

3. The vertical cross section through the apex A of a right circular 30
cone is an equilateral triangle ABC , each side of which is 24 inches.
A fly starts from the point B in the base, walking round the surface
of the cone to a point D in AC 7 inches from A . Find geometrically
the length of the shortest path the fly can take.



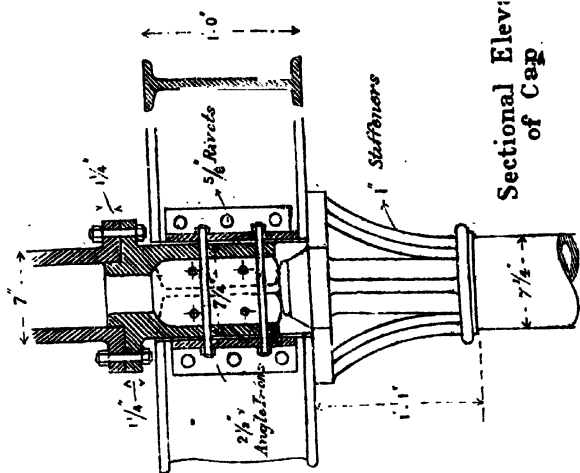
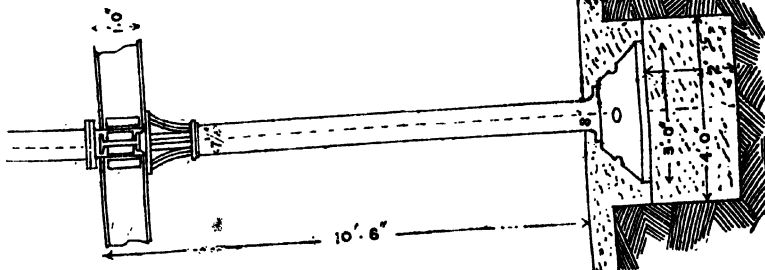
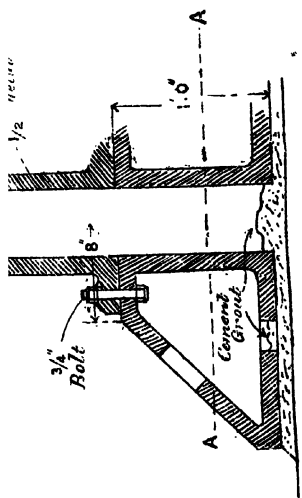
4. A square bottle rests on a square four-legged stool. Make 50 a perspective sketch of this to approximately three times its size ;



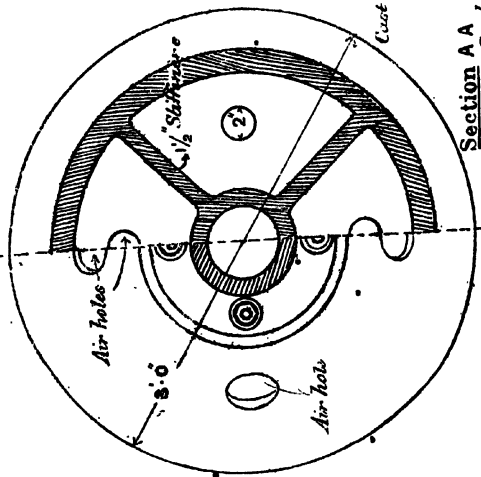
the objects being placed to the right and below the line of vision.

5. Draw an elevation of the accompanying column to scale $\frac{1}{2}$ inch 65 to the foot. Show also the sectional elevations of the cap and base to a scale $1\frac{1}{2}$ " to the foot.

11251100



Sectional Elev.
of Cap



Section A A
Cut Iron base



B.E. Examination.

1907.

STATICS AND DYNAMICS.

Examiner—DR. C. E. CULLIS, M.A., PH.D.

The figures in the margin indicate full marks.

1. If a couple of moment G acts on a rigid body, prove that the virtual work of the forces of the couple in any virtual displacement of the body is $G \delta\theta$, where $\delta\theta$ is the component angular displacement about an axis perpendicular to the plane of the couple. State and prove the Principle of Virtual Work for forces acting in three dimensions on a rigid body. 20

2. A square lamina whose sides are of length $2a$ is placed with its plane vertical between two smooth pegs which are in the same horizontal line and at a distance c apart. Apply the Principle of Virtual Work to show that the inclination of one of the sides to the horizon is either 45° or 20

$\frac{1}{2}$

3. A parallelogram formed of four rods of uniform material and thickness freely jointed at their ends is suspended from one angular point which is connected with the opposite angular point by a string of such a length that the figure is rectangular. Prove (preferably by a graphical construction) that the tension of the string is half the weight of the four rods, and that the direction of the stress between the two rods at either of the points not connected by the string, bisects the angle between them. 24

4. Explain how the force and funicular polygons may be used to determine graphically the sum of the moments of any number of coplanar forces about any point in their plane. 25

A uniform heavy beam AB of weight $4W$ carries a load $2W$ at a point O in AB such that $AO = \frac{1}{2}AB$, and is supported in a horizontal position by two smooth props, one at each end. Show that the funicular polygon of the forces acting on the rod consists of two parabolic arcs. Compare the bending moment at the middle of the rod with that at O , and find at what point of the rod the bending moment is greatest.

5. Explain what is meant by the dimensions of a physical quantity in mass, length and time. 20

If the kinetic energy of a train of 100 tons moving at the rate of 45 miles an hour is represented by 11, and its momentum by 5, and if 40 horse-power is represented by 15, find the units of mass, length and time, and find the measure of the acceleration produced by gravity.

6. A particle is describing a circle of radius a with variable angular 20

velocity ω ; show that its component accelerations along the forward tangent and inward normal are respectively $a\omega$ and $a\omega^2$.

A smooth parabolic tube whose latus rectum is $4a$, revolves about its axis which is vertical with uniform angular velocity ω . Show that a heavy particle will remain at rest relatively to the tube at any point of it

if
$$\omega = \frac{1}{2a}.$$

7. A particle is moving in any manner in space under the action of any forces; prove that the increase in its kinetic energy in any time is equal to the work done by the forces. 23

A particle is suspended from a fixed point by a string of length a , and is projected from its lowest position with a horizontal velocity

Show that it will pass through the point of suspension, and find the direction of its motion at that instant.

8. A rigid body is constrained to move about a fixed axis. Prove that its kinetic energy at any time is $\frac{1}{2} I \dot{\theta}^2$, where I is the moment of inertia of the body about the fixed axis, and θ is the angle between two planes through the axis, one fixed in the body, and the other fixed in space. 25

A pendulum consists of a uniform rod AB of mass m and length l , to the end B of which is attached a cylindrical bob of mass M , radius a and length h . Find the period in which it performs small oscillations under gravity when suspended from a horizontal axis through the end A . Also find the initial angular velocity which will carry it from its position of equilibrium into a horizontal position.

9. Find the work done in stretching a massless elastic string by a given amount. 23

A weight W is suspended by a massless string of natural length l whose modulus of elasticity is λ . Find the length of the string in the position of equilibrium, and the period of a small vertical oscillation.

HYDROSTATICS.

Examiner—C. LITTLE, ESQ., M.A.

The figures in the margin indicate full marks.

1. Explain the principles involved in the construction of the Hydraulic Press. Note on the practical difficulties that arise, and the means that have been used to reduce or remove these difficulties. 25

Assume magnitudes for a Press of your own construction and calculate the mechanical advantage. 30

2. Define *specific gravity* and *density*.

Find a mathematical expression for the specific gravity of a mixture of substances, of which the volumes and specific gravities are given. State any assumption made by you in the course of the proof and say whether it is true in nature.

A piece of wood weighs 6 lbs. in air ; a piece of lead which weighs 12 lbs. in water is fastened to it and the two together weigh 10 lbs. in water ; find the specific gravity of the wood.

3. Prove that the common surface of any two fluids at rest in the same vessel is a horizontal plane ; and find the pressure at any point in the lower liquid. 30

If two liquids, that do not mix, meet in a bent tube, prove that the heights of their upper surfaces above the common surface are inversely proportional to their intrinsic weights.

4. State the conditions of equilibrium of a solid floating freely in liquid ; and show under what conditions the equilibrium is stable or otherwise. 30

A man whose weight is 168 lbs. can just float in water when a certain quantity of cork is attached to him. Given that his specific gravity is 1.12, that of cork .24, and that of water 1 ; assuming a cubic foot of water to weigh 1,000 ozs. prove that the gravity of cork is .38 of a cubic foot approximately.

5. Give examples of a body floating in fluid under constraint : also state in each case what the conditions of equilibrium are and how they differ from the conditions in the case of free floating. 30

Two equal uniform rods, connected by a smooth hinge, and inclined at the same angle to the horizon, are suspended by an elastic vertical string fastened to the hinge, the lower ends of the rods resting in a fluid ; determine the position of equilibrium.

6. Show how the centre of pressure of an area of any shape, exposed to fluid pressure, may be found. Use cartesian coordinates, and explain why certain axes are more suitable than others for problems of this nature. 30

A semi-circular lamina is completely immersed in water with its plane vertical, so that the extremity *A* of its bounding diameter is in the surface, and the diameter makes with the surface an angle α . Find the position of the centre of pressure ; and prove that if *E* be the centre and θ the angle between *AE* and the diameter,

$$\tan \theta = \frac{3\pi + 16 \tan \alpha}{16 + 5\pi \tan \alpha}.$$

7. A square lamina (side $2a$) has one angular point in a fluid and rests in a vertical plane on two smooth horizontal pegs in the surface of the fluid and at a distance *c* apart. If the specific gravity of the material of the lamina compared with water is $\frac{c^2}{24a^2}$, prove that the inclination of a side of the square to the horizon in an unsymmetrical position of equilibrium is given by 30

$$c \cos 2\theta \cos \left(\theta + \frac{\pi}{4} \right) = \frac{a}{c\sqrt{2}}.$$

8. Discuss the method of determining heights by the barometer : and prove the formula 30

$$z' - z = \frac{h}{g}(1 + at) \left\{ \log h(1 - \theta\tau) - \log h'(1 - \theta\tau') \right\},$$

explaining the meaning of the symbols and noting any approximations that you may introduce.

9. Explain the mechanism of the condenser : and find the density of its contents after *n* strokes of the piston. 30

Find after how many strokes of the piston of a condenser the pressure in the denser will be doubled.

10. A cubical box, filled with fluid of a given weight W , is supported in such a position that one of its edges is horizontal, and that one of its sides passing through this edge is inclined to the horizon at an angle a : prove that the sum of the pressures on the six faces is equal to $3W (\sin a + \cos a)$. 30

GEOLOGY.

Examiners— $\left\{ \begin{array}{l} \text{P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.} \\ \text{W. T. GRIFFITH, ESQ., A.R.S.M., F.G.S.,} \\ \text{M.I.M.E.} \end{array} \right.$

The candidate is directed to answer only one of each pair of questions marked (a) and (b).

The same value is attached to each question.

1. (a) A rock contains quartz, orthoclase, plagioclase, hornblende, and garnet. How do you distinguish these minerals in a microscopic slide?

(b) What are the essential characters of breccias, plagioclase-basalt, diorite, and gneiss?

Give an outline of the classification of massive rocks.

2. (a) Give an account of the contemporaneous and subsequent phases of eruptivity, illustrating your statements by diagrams.

(b) Describe the geological action of a river. Mention some of the peculiarities of Indian rivers.

3. (a) Give a concise account of the theories on the origin of coal-seams.

(b) Classify ore-deposits, and illustrate the various descriptions of ore-deposits by neatly drawn sketches.

4. (a) Discuss the various evidences of unconformability. Give some Indian examples.

(b) Define and illustrate by sketches—syncline, overlap, reversed fault, throw of fault, strike. Explain Dalton's construction to ascertain the real dip from two apparent dips.

5. (a) Give an outline of the geological history of the Indian Peninsula and compare it with the geological history of Europe. Only the great unconformities are to be taken into account.

(b) Give an account of the distribution and Petrology of the Pyraea Group of the Indian Peninsula.

6. (a) Shortly characterize the lower Gondwanas as exhibited in the Raniganj Coal-field. Draw a rough sketch of this Coal-field showing the distribution of the various stages.

(b) Compare and contrast with each other the three great periods of eruptions of the Indian Peninsula and their products, namely, the eruption of the Charnockite rocks, the eruption of Rajmahal Basalts, and the Deccan Trap outburst.

MINERALOGY AND METALLURGY.

Examiners—{ P. ERÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.
W. T. GRIFFITH, ESQ., A.R.S.M., F.G.S., M.I.M.E.

The candidate is directed to answer only one of each pair of questions marked (a) and (b).

The same value is attached to each question.

1. (a) How do you determine the specific gravity of a mineral, (i) when the mineral is in the form of a homogeneous lump, (ii) when in the state of fragments between 0.1 and 2 mm. in diameter, (iii) when in the state of a very fine powder.

(b) What conclusions would you draw from the following observations made during the microscopic examination of a mineral :—

(i) The mineral has a shagreened (ground glass-like) appearance ;

(ii) the polarization colour between crossed nicols is purple, the thickness of the slide being about 0.03 mm. ;

(iii) the mineral is dark-red when examined in one position of the polarizing nicol and green when the polarizer is turned through 90 degrees, the analyser being removed.

Mention some minerals which have either the one or the other of these properties, and add some theoretical explanations.

2. (a) Making use of the methods of stereometric projection show what crystallographic classes are possible in the triclinic, monoclinic, and rhombic systems

(b) Explain the principles of Miller's notation. A tetragonal form has the Naumannian symbol $3P \frac{3}{2}$, what is the corresponding symbol in index notation ? Give the modern definition of sphenoid, doma, prism, and pedion.

3. (a) On chemical analysis it is found that a mineral has the following percentage composition ; what is its chemical formula ?

| | | | | | |
|--------------------------------|----|----|-------|----|---------|
| SiO ₂ | .. | .. | 43.96 | Si | = 28.4. |
| Al ₂ O ₃ | .. | .. | 35.30 | Al | = 27.1. |
| Fe ₂ O ₃ | .. | .. | 0.63 | Fe | = 56.0. |
| CaO | .. | .. | 18.98 | Ca | = 40.0. |
| MgO | .. | .. | 0.45 | Mg | = 24.4. |
| Na ₂ O | .. | .. | 0.47 | Na | = 23.0. |
| K ₂ O | .. | .. | 0.39 | K | = 39.1. |

(b) How would you distinguish most readily :—

(i) talk from mica,

(ii) calcite from dolomite,

(iii) hematite from goethite,

(iv) augite from hornblende,

(v) gold from pyrite ?

4. (a) Explain the action called liquation. How would you obtain the eutectic alloy of a series : what are its properties ?

(b) What are "fluxes" and "slags" ? What considerations determine the choice of a flux ? What economic applications are there for slags ?

5. (a) How would you determine the suitability of a sample of coke for metallurgical purposes ?

(b) How would you determine the temperature of the products of combustion in a vertical chimney in connection with a furnace ? Describe the apparatus you would use.

6. (a) Sketch and describe the Bessemer converter. What is the action during a "blow"?

(b) Describe the effect on the physical properties of a piece of iron when heated from the ordinary atmospheric temperature up to its melting point.

PRACTICAL METALLURGY.

Examiner—{ W. T. GRIFFITH, Esq., A.R.S.M., F.G.S.,
M.I.M.E.

The figures in the margin indicate full marks.

1. Prepare 1,000 grains of an alloy containing 660 grains of Copper, 300 grains of Zinc, and 40 grains of Lead. 90
2. Determine the percentage of coke obtainable from the given sample of coal at a bright-red heat, and describe your sample of coke. 30
3. Ascertain the fire-resisting qualities of the clay supplied to you. 30
4. Produce your note-books of work in a Practical Metallurgical Laboratory. 50

PRACTICAL PHYSICS.

Examinee—P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.

The candidate will work out of the following problems.

1. Work out a set of curves representing graphically the intensity of emission of the given incandescent lamp in different directions for voltages at the lamp terminals of 110, 112, and 115.
2. Test the goniometer for correctness of adjustment of its various parts, and determine, as accurately as possible, the indices of refraction of the ordinary and extraordinary rays for the given quartz prism.
3. Determine the horizontal component of terrestrial magnetism, and investigate the influence on this value exerted by a mass of iron placed in various positions in the vicinity of the magnetometer.
4. Determine the sensitiveness of the Helmholtz galvanometer (a) when tested by itself; (b) when shielded by a hollow cylinder of soft iron; (c) when under the influence of a directing magnet.
5. Calibrate the given ammeter (a) by the aid of a Kelvin's balance; (b) by means of a copper voltmeter.
6. Investigate the question whether the electro-chemical equivalent of copper or silver depends (a) on the strength of current; (b) on the temperature.
7. Compare with each other the temperature co-efficients of the resistivity of copper, zinc, and constantan.
8. Construct an accurate one-ohm resistance of the proper dimensions, and by using it and the potentiometer, calibrate the given ampere-meter.
9. Investigate the question whether annealing and tempering affects the length of a steel rod.
10. Investigate the relation between stress and strain of wires of different lengths, different cross-sections, and different materials.

DETAILS OF CONSTRUCTION.

Examiners—{ B. HEATON, ESQ.
B. C. LLOYD, ESQ.

(Only EIGHT questions are to be attempted. Nos. 3, 4, 6, 7 are obligatory ; any four of the remainder are optional).

The figures in the margin indicate full marks.

1. Specify for putting in deep concrete founds (involving pumping) 40
for a building, stating explicitly the materials to be used, the proportions in which they are to be manipulated, and the conditions under which they are to be laid. Also write similar specification for a brick masonry superstructure on the founds.

2. What is the British Standardisation Committee ? What led to 40
its formation and what advantages have been gained as the results of its labours ?

3. Illustrate with fully dimensioned sketches a design for a godown 70
60' x 30', in a damp locality : masonry plinth, damp proof floor, 10' high corrugated iron walls, trussed roof of corrugated iron, suitably ventilated. Show dimensioned details of truss and principal connections of framework.

4. Describe (with dimensioned sketches) the construction in stiff 50
clay mixed with boulders of a well 5' diameter, 50' deep from ground to bottom of curb with the necessary arrangements for drawing water.

Describe the method you would adopt in sinking, and give a list of material and plant you would collect for the work.

5. (a) State the general principles to be adhered to as closely as 40
possible in designing and executing all kinds of joints and fastenings in timber.

Give dimensioned sketches of joints for lengthening :

(b) (i) A timber tie 8" x 4".

(ii) A strut 6" x 6".

(iii) A beam 12" x 6".

(c) Give dimensioned sketches for tenoning an 8" x 4" crossbeam into a 12" x 6" main beam.

6. (a) What is reinforced concrete ? Describe any well-known system of reinforced concrete construction.

(b) What is the fundamental idea in all systems of reinforced concrete construction as regards the relative disposition of the materials used therein ?

(c) State briefly the advantages of reinforced concrete over ordinary forms of construction.

(d) State some of the structural uses to which reinforced concrete is put.

(e) Give reasons for and against this system of construction in Calcutta.

7. Give sketches of a timber floor for a post and mat bungalow 60
containing 2 rooms 10' x 12', 2 bath-rooms 5' x 5', with back verandah 10' x 5' between them, and a front verandah 20' x 12'. All joints should be carefully sketched and figured.

8. Show by dimensioned hand sketches how you would propose to 40
construct a spiral stone stairway in a tower of 6' diameter. The

difference of level of the two landings being 15' and the doorways being over each other.

9. You have burned bricks for the construction of quarters for a munsiff, with necessary outhouses, well and compound wall. You find your outturn to be—

| | |
|-----------|-----|
| 1st class | 15% |
| 2nd class | 25% |
| 3rd class | 30% |
| Jhama | 10% |
| Bats | 20% |

Your total outturn is only just sufficient with a very small margin for waste, and no more can be obtained.

How would you utilize the bricks available in the different parts of the work so as to get the best result ?

10. You are leaving a work sarkar to supervise the building of a block of heavy stone masonry 30' x 20' x 20' high. The material available is Kunti lime surkee and stone blasted from large boulders in the river bed. The sarkar can be relied on to carry out orders and has done well on brickwork but has never seen stone masonry under construction.

Write down the orders, notes and sketches that you would give him with reference to the preparation of the materials and construction and finish of the work.

ROADS AND RAILWAYS.

Papers-setters—{ T. H. RICHARDSON, ESQ.
H. W. JOYCE, ESQ.

- (a) Only EIGHT questions in all to be attempted.
- (b) Questions carry equal marks.
- (c) Marks will be allotted for neatness.
- (d) The answers for each part to be written in separate books.

PART I.

Examiner—B. HEATON, ESQ.

1. Prepare the portion of an earthwork table between 5 ft. and 6 ft. for a road in bank; illustrate its use by taking out the volume of 10 chains of embankment assuming height between 5 and 6 ft. at each peg.

2. Take the case of single line standard gauge Railway Cutting 50 ft. deep, 3 chains long, on a level. Show by plans, sections and sketches the position and nature of every line and mark you would lay on the ground, both for the purpose of construction and for land acquisition.

3. Give sketches of three types of road bridges, the waterway in each case to be 100 ft. clear. Under what conditions would you consider each type to be most suitable? Sketches of details are not required, and only leading dimensions need be marked, but the materials to be used in the different parts of each design are to be clearly shown.

4. Compare the relative advantages and disadvantages of giving a hill road an inward or outward slope.

5. Give a suitable cross section for a road in a 3ft. bank through low-lying country. Soil, heavy retentive clay: rainfall 90": heavy cart traffic during the rains. Specify for the collection of the necessary material and for the construction of the road.

PART II.

Examiner—H. W. JOYCE, ESQ.

6. Define or explain the following terms:—

Camber, heel of switch, distant signal, cofferdam, kentledge, blow (of a well), gusset plate, guardrail, ballast wall, caisson staff, transition curve.

7. Describe briefly how you would find the position of a bridge pier to be constructed in a river with water flowing 5 feet deep. If the pier is to be built on wells, describe the method you would adopt of fixing the wellcurb in position.

8. Draw a complete cross section of a 5'6" gauge Railway Line on wooden sleepers in a seven feet deep "moorum" cutting. The section to extend from inner slope of spoil bank on one side to the same point on the other, and should be carefully dimensioned.

9. Give a dimensioned sketch of a wooden centre suitable for an arch 20-foot span.

10. Draw a plan and cross section of a 6ft. railway culvert in a 20 ft. bank, the soil in the foundation being as follows: top, 3 ft. moorum; then 2 ft. sand; then 5 ft. water bearing silt; then rock. There is no likelihood of scour below 1 ft. depth. Give your reasons for the type of foundation adopted.

HYDRAULIC ENGINEERING.

Paper-Setters— } T. H. RICHARDSON, ESQ.
W. B. McCABE, ESQ.

FIRST HALF.

Examiner—B. HEATON, ESQ.

(Only EIGHT questions are to be taken, and the answers to the two parts of the paper are to be given in separate books.)

The figures in the margin indicate full marks.

1. Draw a dimensioned sketch cross section of a dam or bund, suitable for impounding 20 feet of water above ground level at site of dam. 50

The soil at the dam site is permeable for a depth of 4 feet, but underneath this there is an impermeable layer. Figure both slopes and describe the methods you would adopt to make the dam water-tight and to prevent erosion of its faces.

2. Describe a turbine. What horse power would you expect to get from the turbine you describe; on the assumption that it has an 50

efficiency of 75% and is supplied with x cubic feet of water per minute falling through y feet.

3. Of what thickness should a 48" diameter pipe be, to work safely under a maximum head of 200' : (a) made of mild steel, and (b) made of cast iron. State the ultimate tensile strength you have assumed for each material and what factor of safety you have allowed in each case. 50

(Give any reason you may be aware of, which would cause you to hesitate about using the steel pipe.)

4. One million gallons per day has to be delivered to a town through a pipe 5 miles long. The source of supply is 250' above datum, and the point where the pipe enters the town 100' above datum. What diameter must the pipe be, so that the required quantity of water may be delivered with a terminal head of 100' (the required diameter to be given to the nearest inch). 50

5. A pipe line 5 miles long falls 20 feet per mile for the first two miles from the source of supply, 40 feet per mile for the second 2 miles, and 80 feet per mile for the last mile. 500 cubic feet of water per minute has to be delivered into an open tank through this pipe line. Design the pipe line so that the pipes may not be of larger diameter than is necessary at any part of the line. 50

(The diameter of your pipes to be taken to the nearest inch).

* SECOND HALF.

• Examiner—W. B. McCABE, ESQ.

6. In formula $Q = cA\sqrt{2gh}$ Q = the volume discharge in cubic feet per second. What does each of the other letters represent ? 50

Deduce a formula for the time required to empty a canal lock.

If the water level of the upper reach of a canal be RL. 159.4, that of the lower RL. 150.4 ; if the lock be 80' long by 15' wide, and if there be two sluices each 2' by 2' : what time will it take to empty the lock ?

7. It is proposed to carry a road over a river by a bridge of three spans of 100' : you are instructed to report on the sufficiency of the waterway provided. It is the dry season and you find the river bed practically dry. The river flows between high well-defined banks for some miles above and below your crossing. What observations and measurements would you take in the field ? 50

Explain clearly how you would estimate the necessary waterway from the data you would obtain.

8. How would you proceed to determine the probable yield of a well by experiment ? 50

9. Explain the terms :— 50

Duty of water.

Scouring sluice.

Regulating works.

Syphon culvert.

Catchment area.

Perennial canal.

10. Give a general description of a sand pump dredger for river improvement. 50

How would you propose to counterpoise the delivery pipe ?

APPLIED MECHANICS.

Examiners— { W. H. EVERETT, Esq., M.I. MECH. E.
 { B. GUNSON, Esq.

(Only EIGHT questions to be attempted.)

1. Two rolled steel joists are to be used together over the same span : and may be placed either side by side, or one above the other with the upper flange of one riveted to the lower flange of the other. Compare the strengths of the two arrangements, given that each joist has area of section 13 sq. in., moment of inertia of section 315 inch units, and depth 12 inches.

2. A beam of 20 ft. span has a uniform load of one ton per foot from a point 2 ft. from one end to a point 9 ft. from the same end : draw to scale the diagrams of shearing force and bending moment, and find the maximum bending moment.

3. A pipe $2\frac{1}{2}$ ft' in diameter is to be made of mild steel plate riveted, with strength of joint $\frac{3}{4}$ of strength of plate. What must be the thickness of the plate to stand a pressure of 400 ft. of head of water, allowing 10,000 lb. per sq. in. as working stress in the steel ? Would the actual stress be affected if the pipe, where horizontal, were unsupported for a short distance ?

4. In testing a piece of mild steel the following particulars were taken : original diameter of bar $1\frac{3}{8}$ " ; final diameter at fracture 0.9" ; load causing fracture $37\frac{1}{2}$ tons ; total extension 1.9" on a length of 8" ; extension on 8" under a load of $12\frac{1}{2}$ tons .007." Find the modulus of elasticity, percentage elongation when fracture occurs, percentage reduction of area, and the breaking stress on original and final areas.

5. Work out an expression for the deflection due to shear in the case of a beam of I section with a load at the middle : and compare with the deflection due to bending.

6. A hollow cast-iron column is to have an external diameter of 10" and is to be 14 ft. long. Its share of the weight to be supported being 42 tons and the factor of safety 12, find the thickness of metal required, from the formula for the crushing load of such a column (in tons)

$$\frac{36 A}{1 + \frac{f^2}{800d^2}}$$

7. Why are the booms of a girder usually larger at the centre than at the ends, and the diagonals larger at the ends than at the centre ? In what cases are parts of structures counterbraced ? Why are the two girders in some bridges braced together overhead ? Explain clearly how wind-bracing acts in a bridge.

8. A suspension bridge is to be constructed to carry 5 cwt. per running foot : if the span is 200' and the dip 40', find the necessary section for the suspending steel cables. What considerations would guide you in choosing the dip for a given span ?

9. A uniform and uniformly loaded beam is supported at the ends and middle : at what height is the middle support if it carries $\frac{1}{3}$ of the whole load ?

10. Design a wall 12 ft. high to stand 10 ft. depth of water, taking the inner side to be vertical and the outside suitably battered. If silt were to settle for some depth against the wall under water, would the stability of the wall be affected ?

MECHANISM AND STEAM ENGINE.

Examiners—{ W. H. EVERETT, ESQ., B.A., B.E., M.I. MECH. E.
F. WALFORD, ESQ., A.R.C.S., A.M.I. MECH. E.

(Only EIGHT questions to be attempted.)

1. A boiler is giving 12lb of steam per minute at a gauge pressure of 100 ($H=1185$, $t=337^{\circ}$), when the engine is temporarily stopped and the feed-pump started. If the fire is not reduced, how many pounds of water at 70° must be pumped into the boiler per minute in order just to prevent the pressure from rising?

2. Sketch and briefly describe the type of boiler which you know best.

3. Find the work done in the cylinder per lb of steam in a non-condensing engine, with cut-off at half stroke and gauge pressure 100 (3.8 c. ft. weigh one lb), assuming hyperbolic expansion, neglecting clearance, and taking the proportion of water in the steam at cut-off to be 40% of the mixture.

4. Describe briefly how you would test the performance of an ordinary boiler and engine.

5. If the slide-valve of an engine is slightly displaced (towards the crank) from its proper position on the valve-rod, show clearly the effect on the steam distribution.

6. A valve has a travel of 4", advance 45 degrees, lap at both ends $1\frac{1}{4}$ " : if the connecting rod is four cranks long, find the point of cut-off at each end. Show how the inequality in cut-off may be removed, and point out any objection to the method you propose.

7. Give a sketch of a Porter governor. If the balls weigh 3lb each, and it is wanted to run at 240 revs. per minute with the balls 6" below the vertex, what must be the load on the governor spindle?

8. Show that an involute curve gives a suitable profile for spur-wheel teeth. And work out an approximate expression for the loss in friction with a pair of spur-wheels.

9. Sketch a traversing screw-jack, explain how it is used in practice, and distinguish between the velocity ratio and the mechanical advantage.

10. Work out an approximate formula for the horse-power safely transmitted by a belt, in terms of the breadth of the belt and its linear velocity, making any necessary assumptions.

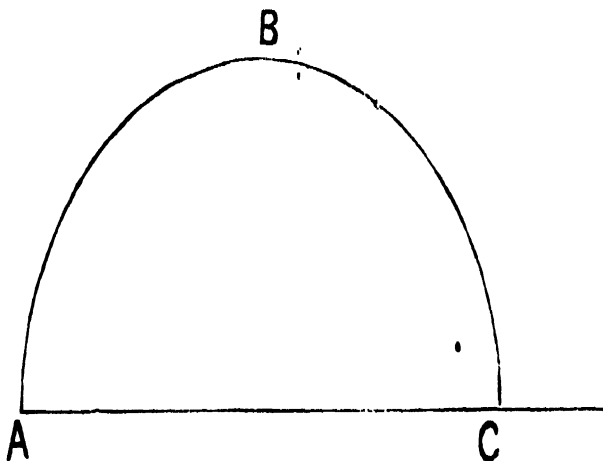
ENGINEERING AND ARCHITECTURAL DRAWING.

Examiners—{ SURENDRAKUMAR BOSE, ESQ., B.C.E.
B. G. GWYTHYR, ESQ. .

The figures in the margin indicate full marks.

1. A room is 30' long, 12' wide and 12' high. On the middle of one of the end walls 9' up from the ground is a lizard, and on the middle of the opposite end wall 3' up from the ground is a fly. Find geometrically the length of the shortest path the lizard can take to the fly.

2. ABC is a semicircular lamina of radius 7", which rests vertically with its base AC in a horizontal plane. A string of 22" has one end fixed at C , and is coiled round the arc so that the other extremity is at A .



The free end A is revolved in the vertical plane of the lamina so as to keep the string always taut.

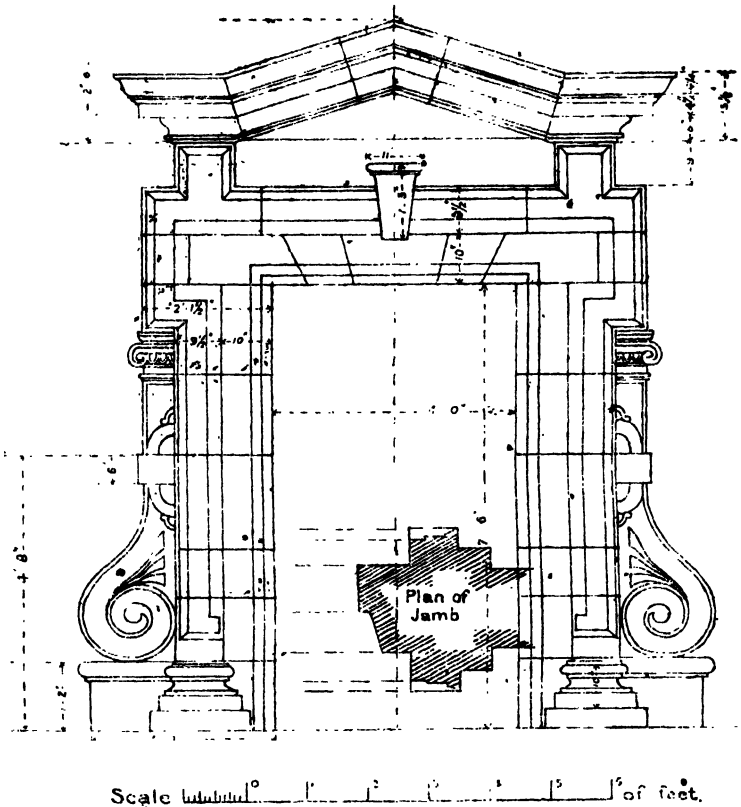
Trace out the curve described by A until it reaches the horizontal plane again.

Draw to scale $\frac{1}{4}$ full size $\left(\pi = \frac{22}{7}\right)$.

3. Draw to scale 1 inch to the foot, one half of the accompanying elevation of a gateway.

4. A culvert 10 ft. wide is to be made through an embankment 18 ft. high with side slopes of 2 to 1. 40

The splay of the wing wall of the culvert is $1\frac{1}{2}$: 1. Find the angle of surcharge of the soil at the back of the wing wall at any cross section of it and give its value in degrees.



OPTIONAL SUBJECTS.

PURE MATHEMATICS

Examiner—C. LITTLE, Esq., M.A.

The figures in the margin indicate full marks.

1. Prepare a table showing the values of y , from the formula 15

$$y = \frac{A}{B + Cx}$$
 corresponding to any ten values of x in arithmetical progression.

$$A = \cdot 3084$$

$$B = \cdot 6059.$$

$$C = \cdot 0038.$$

2. In a given circle a regular hexagon is inscribed, and in the hexagon another circle, then hexagons and circles alternately *ad infinitum*. Find a series to express the areas included between *each* circle and *each* hexagon, and show that the sum of the series approximates to the area of the original circle. 15

3. Sum the following series :— 15

(1) $12 + 9 + 6\frac{3}{4} + \&c.$ to infinity.

(2) $1 + 11 + 111 + 1111 + \&c.$ to n terms.

(3) $1.2.3 + 2.3.4 + 3.4.5 + \&c.$ to n terms.

4. Find at what rate per cent. per annum £907 12s. 6d. will produce £500 compound interest in 6 years, interest being paid monthly. 15

5. Prove De Moivre's theorem for whole numbers, positive or negative. 15

If $\tan(a + i\beta) = \tan \theta + i \sec \theta$, α , β and θ being real, shew that

$$2\alpha = \frac{2n+1}{2} \pi + \theta$$

$$2\beta = \log \cot \frac{\theta}{2}.$$

6. Find the equation of a central conic referred to its principal axes as axes of coordinates. 15

A normal to the hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ meets the axes in M and N : show that if perpendiculars MP , NP be drawn to the axes, the locus of P will be a hyperbola, and find its equation.

7. Find the angle at which the parabolas $x^2 = ay$, and $y^2 = 8ax$ intersect. 15

Draw a figure, correct as to dimensions, showing the two curves and the chord or chords of intersection.

8. Given that

$$\phi + \log(1 - \sin \theta) = 0, \text{ prove that}$$

$$\frac{d^3\phi}{d\theta^3} - \frac{d^2\theta}{d\phi^2} + \sec^2\theta = 0.$$

9. If $\phi(x)$ and $\psi(x)$ vanish when $x=a$, investigate the limiting value of $\frac{\phi(a)}{\psi(a)}$. 15

Find the value of

$$5 \sin 3a - 3 \sin 5a$$

$$5 \tan 3a - 3 \tan 5a$$

when $a=0$.

10. Find the values of the following integrals :— 15

$$\int \frac{dx}{a + b \cos x}, \quad \int \frac{2x^3 - 1}{x^6 + 2x^3 - x^2 + 1} dx, \quad \int \frac{dx}{\sin^2 x \cos^2 x}.$$

MIXED MATHEMATICS.

Examiner—DR. C. E. CULLIS, M.A., PH.D.*The figures in the margin indicate full marks.*

1. State and prove the 'Parallelogram of Velocities' and deduce the 'Parallelogram of Forces.' 16

How must a man throw a stone from a train running at the rate of 15 miles an hour in order to make it move at right angles to the track at the rate of 10 feet per second?

2. A particle is moving along a straight line with uniform acceleration j . If u is its initial velocity, x the space described in t units of time, and v its velocity at the end of that time, prove that $x = ut + \frac{1}{2}jt^2$, and deduce that $x = \frac{1}{2}(u + v) \cdot t$. 22

Two masses M and m are connected by a string which passes over a small smooth pulley at the top of a rough inclined plane whose angle is α , M lying on the plane and m hanging vertically. M moves up the plane for a time and then descends. If λ is the angle of friction for M and the plane, find the ratio of the velocities with which M passes any point O of the plane when ascending and descending.

3. A body has initially a mass of M lbs. and a velocity of V miles per hour. Its mass diminishes at the uniform rate of m lbs. per hour, while its velocity increases at the uniform rate of v miles per hour. What force is acting on the body after an interval of t hours? 22

The hose of a fire engine is inclined at an angle of 45° to the vertical, and discharges 20 lbs. of water per second. The jet strikes a vertical wall at right angles at a height of 35 feet above the nozzle. Show that the pressure on the wall is approximately equal to the weight of 29.5 lbs.

4. Prove that any number of forces acting on a rigid body in a plane can be reduced to a single force acting at any assigned point of the plane together with a couple, and explain how the force and couple can be found. 16

Obtain necessary and sufficient conditions for the equilibrium of a number of coplanar forces acting on a rigid body.

5. Define the centre of a number of coplanar parallel forces, and prove the existence of such a point. 20

Find the centre of gravity of the portion of a uniform solid sphere of radius a contained between two parallel planes lying on the same side of the centre and at distances d_1 and d_2 from it. Deduce the position of the centre of gravity of a solid hemisphere.

6. A uniform solid hemisphere of radius a rests with its plane base inclined at an angle ϵ to the horizon and touching a fixed rough cylinder whose axis is horizontal. It is held in position by a horizontal force applied at the highest point of its circular base. Find the possible positions of the straight line along which it touches the cylinder. 20

7. Describe the common balance. What are the objects to be aimed at in constructing a good balance, and what are the means by which they are attained? 18

The arms of a balance are 11 inches and 12 inches in length respectively, and the beam is horizontal when the scale pans are empty. If a seller puts the substance to be weighed into one scale pan as often as the other, what is his average gain or loss per cent. on his transactions?

8. A particle moving in any manner in a plane is acted on by two 20

forces P and Q in that plane which have a resultant R . Prove (1) that the work done by R in any displacement of the body is equal to the algebraical sum of the works done by P and Q , and (2) that the impulse of R in any time is equal to the vector sum of the impulses of P and Q .

9. A smooth sphere moving in a given manner impinges obliquely on a fixed plane. Find its motion directly after impact, and the impulse of the pressure which the plane exerts upon it. 22

A particle whose coefficient of restitution is e is projected vertically with velocity u from a point O on a smooth fixed plane inclined at an angle a to the horizontal. Find the time which elapses before it ceases to rebound, and the impulses which the plane exerts upon it at the successive rebounds.

10. Enunciate the principle of energy for any system of particles. Apply it to find the velocity which the weight acquires in the first system of pulleys in falling from rest through a given distance when the power is insufficient to balance it, the weights of all the pulleys being taken into account. 20

PHYSICS.

Examiners— $\left\{ \begin{array}{l} \text{P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.} \\ \text{C. W. PEAKE, ESQ., M.A.} \end{array} \right.$

Candidates are required to answer any FIVE of the questions marked A and any two of the questions marked B.

A.

1. Define magnetic permeability and describe fully some method of determining the magnetic permeability of a sample of iron.

2. Describe in full the method you would adopt to determine the horizontal intensity of the earth's magnetic field.

3. Explain the construction and use of a quadrant electrometer, describing the adjustments that are necessary in practice. How would you determine its capacity.

4. Describe some method of measuring low resistances.

5. Describe some form of polarimeter and show clearly how you would use it to determine the density of a pure sugar solution.

6. Write a short note on the interference of light. Why is the principal focus of a common lens a point of maximum brightness, when a pencil of parallel rays is passing through it?

7. Describe with a diagram some form of reflecting telescope and find an expression for its magnifying power.

8. Describe carefully Dumas' method of measuring vapour densities.

9. Define critical temperature. Draw a diagram giving the isothermals of a substance such as Carbon dioxide, which can exist as a liquid, vapour and gas, giving any necessary explanation of their general shape.

B.

10. A body whose mass was 1 gram and temperature 100°C when dropped into a Bunsen's ice calorimeter produced a reduction in volume of 6 cubic millimetres. What was its specific heat? Latent heat of water = 80.1 cc. of ice at 0°C gives $.9178$ cc. of water at 0°C .

11. Electrical energy is sold at the rate of 4 annas per kilowatt hour. Coal to the value of one rupee will on combustion give heat, whose mechanical equivalent is 4×10^8 foot lbs. Assuming that 1 H.P. = 746 watts, compare the prices of the two forms of energy.

12. Find the mechanical force exerted on unit of area at any point of a charged surface.

A conducting sphere of radius a carries a charge e and is surrounded by a dielectric of specific induction capacity K . Shew that there is a repulsion on the surface of $\frac{e^2}{8 \pi k a^4}$ per unit area.

CHEMISTRY.

Paper set by— { W. TATE, ESQ., A.R.C.S., F.C.S.
DR. P. C. RAY, D.Sc., F.C.S.

The figures in the margin indicate full marks.

1. What are the conditions which favour the rusting of iron ? 25
2. Write a brief note on the chemistry of the processes involved in the "setting" of mortar and of cement. 30
3. Name the objectionable impurities of iron and describe the metallurgical operations for removing them. 25
4. Describe the manufacture of white lead. Name any other inorganic substances used in making "paints." 25
5. Point out the essential differences between an alloy and a substance such as galena or as vermilion. 20
6. Iron plates are frequently covered with a thin coating of tin or of zinc, copper articles are often covered with a thin coating of silver; how is this done in each case and what purpose is attained by the operation ? 25

MATERIALS OF CONSTRUCTION.

Examiners— { B. HEATON, ESQ.
RAI KRISHNACHANDRA BANERJEE, BAHADUR,
B.A.

Questions carry equal marks. Only EIGHT to be attempted.

1. To what geological formation does roofing slate belong? Name the localities where it is found in India. What are the qualities for which it is so highly valued? In the examination of building stone, what are the chief points to be attended to?

2. Describe how clays have been formed geologically. What are the peculiar characteristics of the soil in the neighbourhood of Calcutta?

3. When compelled to make bricks of clayey soil, how is shrinking and cracking tendency to be counteracted? In selecting a clay for the manufacture of bricks, how can the presence of lime be tested? In what quantity and in what state is lime admissible in brick clay, and

why? How could you test bricks submitted to you as being of the best quality? What precautions would you use before laying them to ensure their firmly uniting with the mortar, and why?

4. Give an approximate Estimate of the cost of turning out one lac of bricks in Bull's Kiln.

5. From what formations are limestones deduced? How have they been formed?

6. Describe the constitution of limestone such as is used in Bengal. What happens in the successive stages of burning, slaking, mixing and setting? What is the object of using surkhi or sand with mortar? What is "grouting," the use of it and objection to it?

7. If you are making concrete, how would you find the voids in the broken stone or brick, so that you might proportion the matrix to the stone or brick.

Give a specification of lime and cement concretes suitable for use in foundations.

8. If called on to make hydraulic mortar in India, what materials would you select, and how would you proceed with the manufacture so as to get a mortar as near to Portland cement as possible?

9. In what respects do the structures of trees in general differ from those of the palm and bamboo?

What are the characteristics of the following kinds of wood:—

Deodar, gambhar, teak, sal, sundree?

10. What are the principal forms of steel as sold in the market? Describe the process of making blister steel and shear steel. State how to distinguish cast and wrought iron by examination of a fragment. State where iron is found in India.

11. When is puddling resorted to? What is the best material for it?

GEODESY.

Examiners—{ B. HEATON, Esq.
{ AMARNATH DAS, Esq., B.E.

(Candidates shall give their answers in their own words as far as practicable.)

The figures in the margin indicate full marks.

1. Explain the principle and uses of Vernier Scales. 15
With a radius of 3 inches construct a scale and vernier, to read degrees and minutes. Set Vernier to read $10^{\circ}-43'$ and mark point of coincidence.
2. Describe the permanent adjustments of a reversible Dumpy Level. Draw to full size the markings of a Levelling Staff you have used, showing portion from 4.75 to 5.62. Mark on it 4.94. 20
3. In a Level Book, the R. L's shown at 450 ft., 480 ft., 500 ft., 600 ft., and 650 ft., distances are 105.62, 102.45, 106.93, 105.98 and 102.22 respectively. The readings were taken at one setting of the instrument and the foresight to the B.M. was 8.59. Complete the Level Book. 20
4. Sketch and describe a Pocket Sextant; what are its uses? 15
5. What points should you consider in selecting a base line for a Trigonometrical Survey? How would you measure it and how would you reduce the length for plotting the survey? 15

6. What survey operations are necessary to enable you to determine the waterway you should provide in a bridge over a hill stream ? 25

7. Define the terms :---Datum line, benchmark, gauge readings, intermediate readings, tie line, contour lines, magnetic north, and meridional north. 20

What is the Datum of Trigonometrical Survey levels in Bengal ?

8. How would you test the permanent adjustments of a transit Theodolite, and if found faulty how would you correct them ? 20

Tagore Law Examination.

1907.

SUBJECT—THE LAW OF SPECIFIC RELIEF IN INDIA.

Examiner—DR. SATISCHANDRA BANERJEE, M.A., LL.D.

1. What do you understand by " Specific relief " ? Do you consider it a primary or a secondary remedy ? Give reasons for your answer.
2. Explain the nature of a possessory suit. Discuss if an action in ejectment may be maintained upon the basis of bare possession.
3. What are the cardinal principles upon which a court entertains the jurisdiction to decree specific performance of a contract ? Explain the nature of the discretion which the court exercises in the matter.
4. To what equitable reliefs may a party be entitled on the ground of mistake, either unilateral or bilateral ? When may non-disclosure of facts be a good ground for refusing specific relief ?
5. Write a note on the doctrine of *laches* and explain how it has been affected, if at all, by the statute of limitations.
6. Under what circumstances will a court in India make a declaratory decree ?
7. How may a negative contract be enforced ? Write a note on the case of *Lumley v. Wagner*.

B.I. Examination.

1907.

Paper-setters— $\left\{ \begin{array}{l} \text{A. CASPERSZ, ESQ., B.A.} \\ \text{ABDUR RAHIM, ESQ., M.A., B.C.L.} \\ \text{BABU LALMOHAN DAS, M.A., B.L.} \\ \text{,, BASANTAKUMAR BASU, M.A., B.L.} \end{array} \right.$

PRINCIPLES OF JURISPRUDENCE.

FIRST PAPER.

Candidates should give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—BABU BASANTAKUMAR BASU, M.A., B.L.

1. State and explain Bentham's and Austin's definition of law. 15
2. Enumerate the principal points of difference between ancient and modern criminal codes and the causes of the difference. 15

Or

Shortly trace the development of equity in the Roman Law.

3. In what cases and how could the defective title of a Roman purchaser from a person not the rightful owner be cured, and when was the defect incurable? 10
4. Give a short summary of the Roman Law regarding slaves and freedmen. 10

SECOND HALF.

Examiner—P. K. SEN, ESQ., M.A., LL.B.

1. Explain what is meant by a servitude, and enumerate the different kinds of servitudes, giving an instance of each kind. 10
2. What are the rights and duties of neutrals? 10
3. State Savigny's analysis of a contract and Holland's observations thereon. 10
4. Enumerate the principal rights in *rem* and in *personam* and explain the distinction between these two kinds of rights. 10
5. What are the various kinds of civil courts in Bengal to-day and what were they a century and a half-century ago. 10

Or

What are the various legislative authorities in India to-day and what were they a century and a half-century ago, and when were the changes introduced ?

THE LAW RELATING TO PERSONS, ETC.

SECOND PAPER.

Candidates shall give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—BABU MOHINIMOHAN CHATTERJEE, M.A., B.L.

1. Discuss historically the Right of Personal Liberty of the Subject and its limitations. 16

Or

State the different species of guardians known to the law, distinguishing briefly the rights and duties of such guardians in each case.

2. Analyse and discuss, with examples :—The Royal Prerogative, distinguishing between, (a) the royal dignity, (b) the royal authority. 20

3. Explain, with an example in each case, how the age of majority is computed— 5

(a) In the case of a minor of whose property superintendence has been assumed by the Court of Wards.

(b) In the case of a minor of whose property the Court of Wards has not assumed superintendence.

4. Explain, with an example, the principles upon which the Court acts in setting aside *pro tanto* trust for accumulation. 9

SECOND HALF.

Examiner—BABU JNANENDRANATH BASU, B.L.

1. Explain two of the following terms in connection with Mahomedan wills— 8

(a) Kaim-mukâm.

(b) Zimmi.

(c) Sabil-illâh.

Or

State the requisites for the execution of an unprivileged will ?

2. Give one illustration of the application of the rule against perpetuity. 8

3. Explain the following enactment :—

“ Nothing herein contained shall authorise a testator to bequeath property which he could not have alienated *inter vivos*, or to deprive

any persons of their right of maintenance of which, but for Section 2 of this Act, he could not deprive them by will."

4. Explain very briefly, with illustrations in each case, two of the following :— 8

- (a) An onerous bequest.
- (b) A contingent bequest.
- (c) A conditional bequest.

5. Under what circumstances may a universal or residuary legatee be admitted to prove a will ? 8

6. Explain concisely two of the following terms :—

- (a) Devastation.
- (b) Inventory.
- (c) Caveat.
- (d) Just Cause.

THE LAW OF PROPERTY, INCLUDING THE LAW RELATING TO LAND TENURES AND THE REVENUE LAWS.

THIRD PAPER.

Candidates should give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—BABU SIBOHANDRA PALIT, B.L.

1. State the provisions of statutes 13 Eliz. c. 5, and 27 Eliz. c. 4, and the corresponding provisions in the Indian Statute Book. 10
2. State the requisites of a deed, and the causes of avoidance of a deed. 10

Or

State and illustrate the general rules as to the construction of deeds.

3. What is the distinction between easements and profits *à prendre*? Give examples of each, and state how they are created. 10
4. What are the essentials of a trust, and what is the effect if a trust fails wholly or partially in any essential matter? What is the difference between a private and a charitable trust in this respect? 10
5. What are the duties and obligations of a trustee? 10

SECOND HALF.

Examiner—BABU SURENDRACHANDRA SEN, B.L.

1. What are the provisions of Act XI of 1859, Act VIII of 1885, and Regulation VIII of 1819, regarding the setting aside of sales? 10

2. What are the several classes of rayats and on what grounds can they be ejected ? 15

Or

State the leading provisions of Regulation XI. of 1825.

3. With whom was the Permanent Settlement concluded, and what were included in or excluded from assessment of revenue ? 5
4. State the rights of a purchaser at a sale for arrears of revenue ? 15
5. Who is a tenure-holder, and when and to what extent can his rent be enhanced ? 5

Or

State the grounds upon which the money rent of an occupancy raised may be enhanced by suit.

THE LAW OF PROPERTY, INCLUDING THE LAWS OF TRANSFER, PRESCRIPTION AND PREEMPTION.

FOURTH PAPER.

Candidates should give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—CHARUCHANDRA GHOSH, Esq., B.L.

1. Suppose a transfer of property is made subject to a condition—
(a) absolutely restraining the transferee from parting with, or disposing of, his interest in the property, 10

Or

(b) Making any interest therein reserved, to cease on his becoming insolvent or endeavouring to transfer or dispose of the same.

Is such a condition valid ?

2. In what case is a transfer of property for the benefit of a person unborn at the date of transfer, subject to a prior interest created by the same instrument, valid ? 10

3. State the doctrine of *Lis Pendens*. Give an illustration thereof. 10

State the rights of a transferee of immoveable property, who, believing in good faith that he is absolutely entitled thereto, makes any improvement on the property, but is subsequently evicted therefrom by a person having a better title ?

4. Distinguish between the several kinds of mortgages. Is a usufructuary mortgagee, as such, entitled to bring a suit for sale ? 14

5. If the mortgagee acquires by purchase a portion of the mortgaged property, upon what terms may the mortgagor redeem his mortgage ? 6

SECOND HALF.

Examiner—DR. PRIYANATH SEN, M.A., D.L.

1. What are the several modes in which a lease of immoveable property determines ? 12
2. Illustrate the following maxims :—
 - (a) He who seeks equity must do equity. 12
 - (b) Equity looks to the intent rather than to the form.
3. What is a constructive trust ? Give examples of constructive fraud. 12
4. What are the essentials of a gift according to the Mahomedan Law ? 6
5. What are the classes of documents of which registration is compulsory ? 8

Or

What are the essential requisites for the acquisition of a right by prescription ?

THE LAW OF CONTRACTS AND TORTS.

FIFTH PAPER.

Candidates shall give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—J. CAMELL, ESQ., B.A.

1. Take any two of the following cases and give concise reasons for saying whether the court will or will not decree any relief :— 12
 - (a) A father, previous to the marriage of his daughter, told her intended husband that he meant to give them on their marriage, a house at Simultollah, and after their marriage he handed the title-deeds to the husband, and gave him possession of the property. The property is immediately afterwards acquired by the railway company.
 - (b) A contracts to sell Bengal Coal Company's shares to B and then fails to deliver.
 - (c) X contracts to sell Government paper to Y and then fails to deliver.
 - (d) A purchases at a Sheriff's sale " Lot No. 1, Premises No. 35, Goonghur Lane," being 2 biggahs 15 cottahs more or less." On measurement he finds the property is 2 biggahs 8 cottahs in area.
2. Take any two of the following cases, and state, giving example, upon what principles the court will act in granting or refusing an injunction : 12
 - (a) An injurious trade circular.
 - (b) " Boycotting " or " watching and besetting."
 - (c) The case of " fancy words."

3. Will the High Court interfere with a municipal corporation by way of—

- (a) Mandamus,
- (b) Mandatory injunction ?

Discuss concisely the provisions of the Specific Relief Act bearing upon the subject and give illustrations.

4. Discuss shortly the legal rights and liabilities of *A* and *B* in the following case :—

A and *B* are partners in a wine shop. In 1885 Rs. 5,000 Government paper is lost and no record exists as to the numbers of the notes. In 1895 the loss is debited to shop account. In 1900 accounts are adjusted and the partnership is dissolved by agreement. *A* pays *B* Rs. 30,000 in cash and *B* conveys to *A* all his interest in the firm. Neither partner remembers the lost notes at the time of the adjustment, and the notes are not referred to in the accounts taken. In 1905 *A* find the notes sticking to the lower side of a drawer.

The following question may be substituted by candidates for either question 1, question 2 or question 3.

State what was decided in—

- (a) *Foster v. Mackinnon*,
- (b) *Huguenin v. Basiley*,

and comment upon the application of the principles involved.

SECOND HALF.

Examiner—NIRMALCHANDRA SEN, ESQ., M.A.

1. Take either of the following cases, and examine whether *A* obtains any title :

(a) *A* buys from *B*, in good faith, a goat which *B* had stolen from *C*.

(b) *A* sells *B* a quantity of sugar in *A*'s warehouse. It is agreed that three months' credit shall be given. *B* allows the sugar to remain in *A*'s warehouse. *B* becomes insolvent before the three months expire.

2. Explain and distinguish carefully with illustrations (a) Guarantee. (b) Warranty.

Or

Discuss the question whether one co-sharer can be liable to another for conversion.

3. What is the gist of an action for trespass on land ? Take any one of the following cases, and examine the liability of the defendant.

(a) Defendant enters upon and surveys unenclosed land in plaintiff's possession.

(b) Defendant enters plaintiff's house to demand payment of a debt justly due.

(c) Defendant enters plaintiff's land in order to attach his goods. Defendant drives away plaintiff's cows and impounds them.

4. Discuss, with examples, the following proposition :—

"Whatever produces a material discomfort to human life in the neighbourhood, is a nuisance."

5. Take either of the following cases, and examine whether the plaintiff can recover damages. 10

(a) Defendant's horse bites and kicks plaintiff's horse through a partition fence between plaintiff's and defendant's premises.

(b) Defendant is charged by law with the duty of maintaining water-tanks in his district, for purposes of irrigation, as part of a national system of irrigation, for the welfare of the people. By reason of an extraordinary flood one of the tanks gives way, causing damage to the plaintiff.

For Question 1, the following may be substituted :—

A engages B as clerk to collect money for him. B fails to account for some of his receipts, and A, in consequence, calls upon him to furnish security for his duly accounting. C gives his guarantee for B's duly accounting. A does not acquaint C with B's previous conduct. B afterwards makes default. Discuss the rights and liabilities of A, B, and C.

THE LAW OF CRIMES AND CRIMINAL PROCEDURE

SIXTH PAPER.

Candidates should give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—BABU HARAPRASAD CHATTERJEE, M.A., B.L.

1. Can a person abetting the commission of an offence be liable to punishment even though the offence be not committed? If so, in what cases? 10

2. 'No man from a fear of consequences to himself has a right to make himself a party to committing mischief on mankind.' Discuss the above proposition with reference to the provisions of the Indian Penal Code in respect of acts to which a person is compelled by threats. 10

3. Take two of the following cases, and examine whether the accused persons have committed any, and if any, what offences? 10

(a) Where the accused took the complainant's three cows against her will and distributed them among her creditors.

(b) Whether complainant entrusted to the accused (a washerman) certain clothes on the understanding that they were not to be washed by men of a certain class and the accused allowed the clothes to be washed by the prohibited class, in consequence of which they became valueless to the complainant.

(c) Where the accused took away a girl under sixteen years with her consent, from the lawful guardianship of the complainant.

Give reasons for your answer.

4. A dispute as to a piece of land arose between A and B. A came with a party of fifty or sixty men armed with spears and lathies 10

and commenced ploughing the land in dispute. They were met by a similar party of *B*'s men. A fight took place, in the course of which *X*, one of *B*'s party, met his death. The evidence clearly established that *X* was present at the riot as a professional lathial, and that he and the men with whom he was siding, being also professional spearmen, brought on the fight intentionally, and that they entered into it willingly and with pre-consent, being well aware of the risk they ran by so doing. Discuss the question whether *C*, *D* and *E*, who took part in the riot on the side of *A*, are guilty under s. 302 or s. 304 of the Indian Penal Code read with s. 149.

5. *A* intending to forge a document professing to be executed by *B*, had engaged a writer to accompany him to a place where *B* would be found and had also got one *C* to purchase a stamped paper for a bond and to represent himself as *B*, whereby the stamp-vendor endorsed the stamp with a statement that it has been sold to *B*. Is *A* guilty of an attempt to commit forgery? Give reasons for your answer. 10

Or

Give the meanings of the following words as used in the Indian Penal Code :—' public servant,' ' document,' ' valuable security,' ' illegal,' ' Government.'

• SECOND HALF.

Examiner—MAULAVI ZAHADUR RAHIM ZAHID, M.A., B.L.

1. If an accused be tried for and convicted of several charges of more than three offences of the same kind and extending over more than one year, is this an error or irregularity which can be remedied by s. 537 of the Criminal Procedure Code? Give reasons in support of your answer. 10

2. What are the principal points of difference in the procedure to be followed by a magistrate trying summons cases and warrant cases respectively? 10

3. State the rules laid down in the Code of Criminal Procedure for the purpose of determining the place of enquiry or trial of an accused person. 10

Or

When can a person charged with one offence be convicted of another? Illustrate your answer by examples.

4. What is the nature of the powers of control which a district magistrate has over his subordinate magistrates? 10

5. In cases tried by jury what are the respective duties of the judge and the jury? 10

THE LAW OF CIVIL PROCEDURE, EVIDENCE AND LIMITATION.

SEVENTH PAPER.

Candidates should give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—BABU JOGESCHANDRA DE, B.L.

1. Give a brief sketch of the procedure for the trial of a civil suit, from its institution to the final decree. 10

2. If a matter in issue in a certain suit is directly and substantially in issue in a previously instituted suit for the same relief, between the same parties, pending in another court, what is the procedure to be adopted ? 10

Or

Does a judgment in a rent suit on an issue as to the validity or otherwise of the adoption of the plaintiff, operate as *res judicata*, when the same issue is raised in a subsequent suit between the same parties or their privies for possession of the property—

(a) where the former judgment is of a munsiff, and the subsequent suit is before a subordinate judge ;

(b) where the former judgment is of a subordinate judge and the subsequent suit is before a munsiff ?

3. What persons may be joined as plaintiffs in a suit ? When there are numerous parties having the same interest in a suit, what is the procedure to be adopted ? 10

4. Specify the questions which may be determined by a Court executing a decree, and not by a separate suit ? 10

Or

State the procedure for attachment of a decree for money.

5. Upon what grounds may a sale of immoveable property be set aside ? 10

Or

What are the grounds upon which an application for review of judgment may be made to the court which pronounced the judgment ?

SECOND HALF.

Examiner—NRIPENDRANATH SARKAR, ESQ., M.A., B.L.

1. State some of the more important provisions of the Law of Evidence which are peculiar to criminal trials and inapplicable to the 10

trial of civil cases. Is there any difference as to the *effect* of evidence in Civil and Criminal Proceedings ? If so, what ?

2. What are the general principles regulating the burden of proof ? 10
Illustrate your answer by examples.

Or

What are the conditions under which an entry in an official book or register stating a fact in issue becomes a relevant fact ? What is the evidentiary value of an entry in a man's account-book in support of his claim ?

3. What do you understand by the proposition 'an estoppel is only matter of proof' ? State the principle on which the rule of estoppel is founded and shew its application to the estoppel of tenant. 10

4. Under what circumstances and in what ways does fraud, payment of interest, part-payment of principal and receipt of produce of mortgaged land affect computation of the time limited for instituting suits ? 10

5. What are the conditions under which an acknowledgment of liability gives rise to a new period of limitation ? 10

HINDU LAW, MUHAMMADAN LAW AND THE LAW OF INTESTATE SUCCESSION.

EIGHTH PAPER.

Candidates should give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

FIRST HALF.

Examiner—BABU DIGAMBAR CHATTERJEE, M.A., B.L.

1. What are the different schools of Hindu Law ? What are the causes of their variance ? 8

Or

Define Sapinda and Samanodaka according to the Mitakshara and the Dayabhaga respectively.

2. Enumerate the purposes for which a Hindu widow may convey an absolute estate to a stranger. 10

To what extent, if any, is a conveyance by a Hindu widow assented to by some out of several reversioners of the same degree valid ?

3. What amongst the twice-born classes are the essentials of a valid adoption in the Dattaka form ? 10

Are simultaneous and plural adoptions valid ?

4. State the extent of the power of alienation of a member of a joint Hindu family governed by the Mitakshara law, without the assent of his co-parceners, in any two of the following places: (a) Bengal, (b) Madras, and (c) Bombay ? 11

5. In the case of an 'impartible raj'—

(a) Can the holder of it make a gift or a testamentary disposition of any portion of the estate ? 11

Or

(b) Does the rank of the wives of the last holder, or the seniority of birth of the sons, determine the preferential right to succession ?

SECOND HALF.

Examiner—A. AL-MA'MŪN SUHRAWARDY, M.A., LL.D., PH.D.,
BARRISTER-AT-LAW.

1. State the main features of difference in the classification of heirs and order of succession between the Hanafi and the Shia schools of Law, and between the Hanafis on the one hand and the Shaffis and Malikis on the other. 10

2. What do you understand by the following expressions as used in Mohammadan Law :— 10

'A *trile* grandfather,' ' *radd* or return,' 'residuaries in another's right,' ' *iddut* or period of probation,' and ' *Khula* ' ?

3. What are the necessary conditions of a valid acknowledgment of heirs under the Hanafi Law ? 10

Or

What are the important points of difference between the Hanafi and the Shia schools in the laws relating to (a) forms of marriage, (b) option of puberty, (c) *talak* or divorce ?

4. What is the extent of the power of a father to give his children in marriage according to (a) the Hanafis, (b) the Shaffis, and (c) the Shias ? State the principle in which *mahri-misl* or customary dower is determined. 10

Or

What powers of disposal does the guardian of an infant possess under the Muhammadan Law over his property ? Does it make any difference in the law whether the mother or the father or some other relation of the infant is the guardian ? If so, what ?

5. A dies leaving him surviving B his widow, C his son, D and E grandson and grand-daughter respectively, being children of a pre-deceased son, and F his brother. Divide A's estate among his heirs according to the Indian Succession Act. 10

I.L. Examination.

1907.

HINDU LAW.

FIRST PAPER.

Examiner—BABU GOLÁPCHANDRA SARKÁR SÁSTRÍ, M.A., B.L.

Candidates are required to answer either question (a) or (b) in each of the five sets of questions.

1. (a) State briefly the subjects dealt with in chapters 3, 7, 8 and 9 of Manu's Code. Does this Code disclose such partiality for a particular class of persons that it may be said to have been compiled for their benefit? Explain the five great sacrifices prescribed for daily performance by householders, and state the ideal of life evidenced by them. What are the seven limbs or parts of a political state? What description of daughter's son is implied by the term *Dauhitra* in all the slokas of Manu, in which that term is used, such as the following:—

पौत्रदौहित्रयो लोके द्विषेष्टौ नास्ति कश्चन ।

(b) How is a Vyavahára-pada (or title of law, or topic of litigation) defined by Yájñavalkya? Enumerate the Vyavahára-padas mentioned by Manu. Was any addition made to them by any other sage? If so, how and why? Describe the constitution of a court of justice according to Manu and Yájñavalkya. Was the distinction between civil and criminal liabilities recognised in the Hindu Code?

2. (a) What are the definitions of *Dāya* and Partition under the Mitáksharā and the Dāyabhāga? Point out their difference in the two schools, and the different legal incidents deduced therefrom. Discuss the nature of the co-tenancy of co-heirs in the two schools, with respect to property inherited—from (1) ancestors, and (2) collaterals. What conclusion is arrived at by Vijnāna Bhikshu on the question; namely,—“Whether partition created ownership, or partition can be made only of that in which ownership has already been acquired by the co-sharers”? Discuss the correctness or otherwise, according to the Mitáksharā, of the proposition, namely, “The father's wife's right to a share is treated by partition”—enunciated in Mitáksharā cases,—having regard to the said conclusion.

(b) Is survivorship in Hindu Law the same as that in English Law? If not, what is the difference? Discuss the applicability of survivorship to inherited property in the two schools. To what cases under the Dāyabhāga has survivorship been applied? Is survivorship consistent with Jīmútavāhana's view of the nature of co-tenancy of co-heirs? Explain whether under the Mitáksharā, survivorship is applicable to the estate

of *A*, ultimately inherited by *X* and *Y* his two grandsons by daughter in the following cases :—

(1) *A* dies, leaving a daughter *D* as his only heir ; she inherits his estate, and then dies, leaving two sons *X* and *Y* who are members of a joint family ; and succeed to *A*'s estate as his reversionary heirs on *D*'s death.

(2) *A* had two daughters, *D* and *E*, who died in his lifetime, each leaving a son, *X* and *Y* respectively ; then *A* died, leaving *X* and *Y* as his heirs who take his estate.

(3) *A* died, leaving a son *S* and a daughter *D*, whereupon *S* got *A*'s estate as the latter's only heir, and then died, leaving as his heirs his father's daughter *D*'s two sons, *X* and *Y*, who are members of a joint family.

3. (a) What is meant by *ancestral property* in Hindu Law ? What is the original Sanskrit word for this term ? Does the same include maternal grandfather's estate ? Is there any distinction, under the *Dáyabhāga*, between the ancestral and the self-acquired properties in hands of a father as regards his power of disposal of them, against the wishes of his sons ? Is the doctrine enunciated by our courts that there is no distinction between the said two kinds of property in Bengal, and a father is competent to dispose of the ancestral property in any manner he pleases, to the detriment of his son—deducible from the *Dáyabhāga*, and if so, how ? Can you reconcile the said doctrine with *Jīmútavāhana*'s own conclusion contained in the following passage of the *Dáyabhāga*, Ch. ii. para. 73 :—

“Therefore, the meaning of the texts is, that a father may reserve for himself two shares of wealth which has descended in succession from ancestors, or of that which has been acquired by his son. He is not entitled to more, however desirous of it he may be. But, of his own acquired wealth, he may reserve as much as he pleases.”

The conclusion being, that a father making partition of property among his sons, is *not entitled to take himself more than two shares of ancestral property, however desirous he may be to have more.*

(b) Explain re union in both the schools. Who may be deemed re-united for the purpose of enjoying the benefit of re-union ? Does survivorship apply to re-united-property under the *Mitákshará* ? A co-parcener in the Benares school became re-united with his father after partition, and then died, leaving behind him his father and a separated full brother : which of them is entitled to take his share ? In this case, if the father had died leaving the two sons, who would get his share ?

4. (a) Upon what principles are the orders of succession to a man's property worked out in the *Mitákshará* and the *Dáyabhāga* respectively ? Explain the differences in the orders in the two schools, and the reasons for the same.

(b) Explain the nature and character of Impartible Estates. Can an impartible estate belong to a joint family under the *Mitákshará* ? If so, in what sense ? What is the present state of the law relating to alienation of such estates ? Does survivorship apply to an alienable impartible estate ? How do you reconcile survivorship with the holder's absolute power of alienation ? Can the debts due by a deceased holder of an impartible estate be realized from the estate in the successor's hands ?

5 (a) In what character does a father make a gift of his son in adoption ? Can a Mahomedan, who had been a Hindu, give away his son in adoption, and, if so, under what conditions ? Is an agreement between the adopting widow and the natural father, before the adoption, whereby rights in the husband's estate are reserved for the widow by curtailing the adopted son's rights, valid and binding on the latter ; and if so, subject to what conditions ?

(b) Who are divested of the adoptive father's estate on an adop-

tion by a widow? Is the adopting widow—who had inherited her husband's estate, not from her husband as his heir, but from her deceased son who had at first inherited the same on the father's death—divested of that estate by adoption? If so, on what principle? Is the son, adopted by a widow, entitled to recover possession of property alienated by her before adoption without legal necessity, from the transferee; and, if so, when does his cause of action arise?

JURISPRUDENCE AND THE PRINCIPLES OF LEGISLATION.

SECOND PAPER.

Examiner—SIR GOOROO DASS BANERJEE, KT., M.A., D.L.,
PH.D.

Candidates shall give their answers in their own words as far as practicable.

Of the following ten questions which carry equal marks, only five are to be answered, namely, three from Group A and two from Group B.

GROUP A.

1. Explain the true scope of the science of Jurisprudence. Discuss the proposition—"Jurisprudence is a formal and a progressive science."
2. Briefly explain the operation of the different agencies by which Positive Law is made or modified. Discuss the position of the judge as a law-maker, with reference to (a) English law and (b) Hindu law, as administered in British India.
3. Compare Austin's view of Sovereignty with that of Maine, and briefly indicate the process of transition from *tribal* to *territorial* Sovereignty according to the latter jurist. What is the ultimate basis of Sovereign authority in a State?
4. Explain the proposition—"The unit of an ancient society was the Family, of a modern society the Individual"—illustrating your remarks by reference to Hindu law or to any other system of law.
5. Define the term Right, mention the different elements involved in the notion of a Legal Right, and give the leading modes of classifying Rights. Criticise the propositions—"Right is Might" and "Might is Right."
6. Give shortly the rules of International Law relating to the origin and termination of States, and to the Dominion and Jurisdiction of a State.

GROUP B.

7. Discuss shortly the grounds of non-liability for loss caused by accident, and give the arguments adduced by Holmes against the possible view that "the State might make itself a mutual insurance company against accidents, and distribute the burden of its citizens' mishaps among all its members."
8. Explain what Holmes means by saying that "without understanding the theory of inheritance it is impossible to understand the theory of

transfer *inter vivos*," and indicate briefly how he illustrates his remark by reference to Roman law and to German and Anglo-Saxon customs.

9. Give Bentham's views regarding the legislator's duty in maintaining the security of property and attaining equality in its distribution ; and criticise or defend his suggestions for reconciling equality with security of property.

10. What according to Bentham are the different classes of cases in which punishment ought not to be inflicted, and what are his reasons for his view ? Give Bentham's arguments in support of his proposition that "the legislator, in the choice of punishments, ought carefully to avoid such as shock established prejudices."

ROMAN LAW.

THIRD PAPER.

Examiner—THE HON'BLE MR. JUSTICE ASUTOSH MOOKERJEE,
SARASWATI, M.A., D.L., D.Sc., F.R.A.S., F.R.S.E.

Candidates should give their answers in their own words as far as possible.

You are not permitted to attempt more than five questions.

1. Examine the different views which have been taken as to the true meaning of the account given by Gaius of the formulary system of procedure.

2. Compare, with reference to both method and consequences, the law of manumission in the time of Justinian with that of the time of the classical jurists.

3. Explain precisely, the Roman conception of "*res extra patrimonium*," and mention any modern analogies which occur to you.

4. Examine and illustrate the nature of the distinction drawn between correalty and solidarity in contracts.

5. State and discuss the views of Savigny as to the origin of Possessory Interdicts.

6. Trace the stages of the process by which nearness of blood, was substituted for agnation as the guiding principle of the Roman law as to intestate succession.

7. State, and trace to their respective causes, the disabilities of women in the sphere of Roman Private Law, and describe the steps by which women, married or unmarried, eventually obtained the full control and disposition of their property.

8. Trace the evolution among the Romans of the various methods of mortgaging property, and compare them with one another in respect of convenience to the owner, and efficiency of protection to the creditor.

9. State the rules as to the noxal surrender of persons, slaves, or animals. What theory do they support as to the original reason of the owner's or superior's liability ?

10. Compare Roman and English law as to the protection afforded to *bona fide* purchasers for value against the rightful owner.

11. State the provisions in Roman law for the protection of creditors against fraudulent dispositions of property by debtors.

12. Explain and examine the statement that "the effect of the Val-

entire law of Citations was to substitute mechanical for scientific jurisprudence."

13. Trace the growth of cosmopolitan ideas at Rome in

(a) the history of Roman land tenure ;

(b) the history of the Roman system of civil process.

14. Give an outline of the history of legal development at Rome and in England, and indicate the conspicuous epochs of legal change in the two cases.

15. Write a short note on the historical relation of the Roman law to the law of England, and illustrate how the leading doctrines of the law of corporations, public and private, came to the English law from Rome.

PRIVATE INTERNATIONAL LAW.

FOURTH PAPER.

Examiner—THE HON'BLE MR. JUSTICE ASUTOSH MOOKERJEE,
SARASWATI, M.A., D.L., D.Sc., F.R.A.S., F.R.S.E.

Candidates should give their answers in their own words as far as possible.

You are not permitted to attempt more than five questions.

1. "English and American Jurisprudence (as regards Private International Law) is characterised by a manifold and conspicuous opposition to the jurisprudence of the European Continent."—*Bar*. Illustrate this statement.

2. Argue the question, whether Domicile or Nationality is preferable as the criterion of Personal Law.

3. "In order to be an English heir, a person must be something more than legitimate."

"A person who, though born out of lawful wedlock, is legitimated according to the law of his father's domicile, is in England, the legitimate child of his father."

Examine these statements, and refer to the leading authorities.

4. Discuss the extra-territorial effects of an English Bankruptcy, regarded as,

(a) An assignment of the bankrupts' property ;

(b) A discharge.

5. X, a German subject, commits, in Belgium, against Y, a French subject, an act which is ground for an action for damages according to English Law, but only for Criminal Proceedings according to Belgian Law. Is an action maintainable by Y in the English Courts ?

6. What Civil Jurisdiction is claimed by the English Courts over wrongful acts committed on the high seas ?

X and Y, Frenchmen domiciled in France, are crossing to England ; while in mid-channel, X commits an assault on Y. What conditions must be satisfied to enable Y to sue X in England ?

7. X died owning land and personalty in England. She was an English-woman by birth, but had married an Italian ; and after his death, she had married his brother. By her second husband, she had an only child A. The second marriage is valid by Italian Law. Can A get the property ?

8. Define a judgment in rem, and illustrate, by reference to leading decisions, how such judgments, when delivered by foreign courts, are treated in (a) English, (b) Indian Courts.

9. X gives A in France a cheque drawn by him on an English bank, partly in payment of money lent by A to X to enable X to play baccarat in a club in France, and as to the balance to be applied by A in discharging debts incurred by X when playing at baccarat in the club. The consideration for the cheque is legal, according to French law. A sues X upon the cheque in the English Courts. Is A entitled to recover?

10. Analyse and illustrate the decision in *two* of the following cases V

- | | |
|---------------------------------|------------------------|
| (i) <i>De Nicols v. Curlier</i> | .. 1900. A. C. 21. |
| (ii) <i>Castrique v. Imrie</i> | .. L. R. 4. H. L. 414. |
| (iii) <i>Ewing v. Orr-Ewing</i> | { 9. Ap. Ca. 34. |
| | { 10. Ap. Ca. 453. |
| (iv) <i>Enohin v. Wylie</i> | 10. H. L. C. 1. |
| (v) <i>The Halley</i> | .. L. R. 2. P. C. 193. |
| (vi) <i>The Indian Chief</i> | .. 3. Rob. 12. |

PRINCIPLES OF EQUITY.

FIFTH PAPER.

Examiner—DR. J. V. RYAN, B.A., LL.D.

(Only TWO questions in each group may be answered.)

The figures in the margin indicate full marks.

1. What was the rule at common law regarding the assignment of choses in action; and what was the reason for the rule? What exceptions have been engrafted on this rule? What was the equitable rule? What assignments are unenforceable in equity as being contrary to public policy? What amounts to an equitable assignment? What is the effect on an equitable assignment of want of notice to the holder of fund, or of want of *distringas* or stop-order? 18

2. What is the general policy of equity as regards the setting aside of voluntary deeds or donations? What is the effect of proof of undue influence? In what classes of cases will it be presumed from the relationship of the parties? Define "undue influence"; and mention any tests by which it may be determined. How far will a court of equity interfere with a voluntary deed or donation as against third parties? 18

3. What is an equitable mortgage; and what are the various ways in which it may be created? What was the rule laid down *Russell v. Russell*, and how did it affect the position of the equitable mortgage? For what debts may an equitable mortgage be a security? What are the objections to equitable mortgages?

GROUP B.

4. Give a brief account of the evolution of the law of mortgage in England from feudal times up to the present date. Notice any 12

possible influence exercised by the Roman law in the development of the doctrine.

5. What are the grounds of equity jurisdiction over the administration of the estates of deceased persons? Show how the interposition of the court of equity was necessary in view of the defective jurisdiction of the ecclesiastical and common law courts. 12

6. What are the extent of and the limitations to the right of an executor to retain his own debt out of his testator's assets? What are the grounds of the right? 12

GROUP C.

7. Define "trust." Enumerate the various classes of trusts and distinguish between them. What property is capable of being made the subject of a trust; and what property cannot be so made? 10

8. What is a resulting trust? Under what circumstances can it arise? To whom does the beneficial interest result when the trust arises (a) under an instrument *inter vivos*, (b) under an instrument directing a conversion, (c) under a will? 10

9. Explain and illustrate what is meant in equity by "notice"; and distinguish between actual and constructive notice. 10

GROUP D.

10. What is the law of England and India respectively as to the creation of trusts of immovable property for religious or charitable purposes? Distinguish between the law applicable to Europeans, Hindus and Mohamedans in India, and define 'charitable purpose.' 10

11. How may a trust created by will fail by reason of remoteness in England and India respectively? 10

12. Explain the doctrine of equity as to purchases made in the name of another person. In what respects does the law as administered in India differ from the English law on the subject? To what extent is parol evidence admissible in England and India? 10

THE LAW OF CONTRACTS AND TORTS.

SIXTH PAPER.

Examiner—THE HON'BLE MR. JUSTICE LALMOHAN
DAS, M.A., B.L.

Candidates should give their answers in their own words as far as possible.

Candidates are not permitted to answer more than THREE questions out of Group A, and more than TWO questions out of Group B.

GROUP A.

1. Expound the true legal theory of the formation of contracts in cases of offers by public advertisement, and sales by auction. Examine some of the leading cases bearing on this topic.

2. Investigate the principle underlying the rule that "the creditor cannot demand, nor can the debtor require him to accept, performance from any third person."

State what exceptions, if any, either real or apparent, there are to this rule.

3. Discuss the effect of mistake (of fact and of law) on contracts, under the English law, and the Indian Contract Act.

Examine the position "mistake does not of itself affect the validity of contracts in general."

4 (a) Define the nature and extent of "the right of stoppage in transit," under the Indian Contract Act.

(b) State precisely the limits of the doctrine of ratification by a principal of the acts of his agent.

5. When is a representation binding on the person making it, and when is it not?

Illustrate and discuss the different cases. Discuss the doctrine of "making representations good."

6. Illustrate the following grounds of defence to a suit for specific performance of contract :—

(a) want of mutuality in the contract,

(b) the contract being ultra vires,

(c) the incapacity of the court to perform part of the contract.

What are the rights of a purchaser or lessee, when a person contracts to sell or let property to him, having only an imperfect title thereto?

GROUP B.

1. Discuss, and illustrate by reference to leading cases, the following exceptions to the general principles of liability for torts :—

(a) Inevitable accident.

(b) Exercise of common right.

2. Expound the law relating to the liability of a master for the frauds of his agent, and discuss the leading cases bearing on this topic.

3. Compare the two cases, *Mogul Steamship Company v. McGregor*, (1892) A.C. 25, and *Quinn v. Leathem*, (1901) A.C. 495, and show, if there is any conflict, either real or apparent, between them.

4. Explain the nature and extent of "the duties of insuring safety," and illustrate them by reference to leading cases.

5. State any three of the following cases :—

(1) *Holroyd v. Marshall*, 10 H.L.C. 191.

(2) *Freeman v. Cooke*, 2 Ex. 654.

(3) "The *Bernina*," L.R. 12 P.D. 36.

(4) *Allen v. Flood*, (1898) A.C. 1.

(5) *Alderson v. Maddison*, 8 App. Cas. 467.

(6) *Abrath v. North Eastern Railway Co.* 11 App. Cas., 247.

(7) *Nordenfelt v. Maxim Nordenfelt & Co.*, (1894) A.C. 535.

(8) *Madras Railway Co. v. Zamindar of Carvatenagram*, L.R.I. Ind. App. 364.

LAW RELATING TO THE TRANSFER OF IM-MOVEABLE PROPERTY AND THE LAW OF PRESCRIPTION.

SEVENTH PAPER.

Examiner—DR. H. S. GOUR, M.A., D.C.L., LL.D.

Candidates should give their answers in their own words as far as possible.

Any six questions may be answered.

1. Contrast briefly the law as to the sale of immoveable property by (a) private treaty, (b) private auction, (c) order of court, and state what covenants, if any, are implied in each.

2. What object does the preparation of an Abstract serve? What particulars must it contain? What points would you look up therein to see whether the title offered is marketable?

3. Comment on the following proposition of Lord St. Leonards respecting covenants on sale: "where the first covenant is general, a subsequent limited covenant will not restrain the generality of the preceding covenant, unless an express intention to do so appear, or the covenants be inconsistent."

4. "A vested interest is not defeated by the death of the transferee before he obtains possession." Is that so only in the case of a vested interest? If not, to what other interests does the rule equally apply, and when?

5. Distinguish 'mortgage' from a 'charge,' and trace the history of these securities down to 1882.

6. What is subrogation, and how far are its principles embodied in the Transfer of Property Act. Will you extend the doctrine to executors carrying on the testator's business though the will gives them no authority to trade? Give reasons and authority for your answer.

7. What is a "contentious suit" with reference to the doctrine of *Lis pendens*. Describe the effect of *Faiyaz Husain v. Prag Narain*, I.L.R. 29 All. 339 on the prevailing view.

8. What is a *quia timet* action, and what are its ingredients?

9. Examine the rule that a gift of future property is void. A makes a *mukasa* grant of a village to B in perpetuity. The village is afterwards assessed to revenue which B asks A to pay under the covenant. Is A liable? Give reasons.

10. How far has Act 2 & 3 Wm. IV. C. 71 affected the principle on which rights to light were previously acquired. How do its provision compare with Act V of 1882.

M.A. Examination.

1907.

ENGLISH.

Paper-setters— { C. H. TAWNEY, ESQ., M.A., C.I.E.
PROF. I. GOLLANCZ, M.A.
REV. DR. J. MORRISON, M.A., D.D.

FIRST PAPER.

DRAMA.

Examiner—H. M. PERCIVAL, ESQ., M.A.

The figures in the margin indicate full marks.

Candidates must give their answers in their own words as far as practicable in all subjects.

1. Write explanatory notes on the following passages, showing clearly by whom, to whom, and under what circumstances each of them is spoken :—

(a) Doctor Fustian, quotha ? mass, Doctor Lopus was never such a doctor.

(b) Such smiling rogues as these,
Like rats, oft bite the holy cords a-twain
Which are too intrinse to unloose ; smooth every passion
That in the natures of their lords rebel ;
Bring oil to fire, snow to their colder moods ;
Renege, affirm, and turn their halcyon beaks
With every gale and vary of their masters,
Knowing nought, like dogs, but following,
A plague upon your epileptic visage !
Smile you my speeches, as I were a fool ?
Goose, if I had you upon Sarum plain,
I'd drive ye cackling home to Camelot.

(c) Then death rock me asleep, abridge my doleful days !
Why, then, let grievous, ghastly, gaping wounds
Untwine the Sisters three ! Come, Atropos, I say !

(d) I remember at Mile-end Green, when I lay at Clement's Inn,
—I was then Sir Dagonet in Arthur's show,—there was a little quiver fellow, and a' would manage you his piece thus.

(e) ' Hang-hog ' is Latin for bacon, I warrant you.

(f) If the devil have him not in fee-simple, with fine and recovery, he will never, I think, in the way of waste, attempt us again.

- (g) You orphan heirs of fixed destiny,
Attend your office and your quality.
Crier Hobgoblin, make the fairy eyes. 2
- (h) Good luck, an 't, be thy will ! what have we here ? Morey
on 's, a barne ; a very pretty barne ! A boy or a child, I wonder ? 3
- (i) O Proserpina,
For the flowers now, that frightened thou let'st fall
From Dis's waggon ! daffodils,
That come before the swallow dares, and take
The winds of March with beauty ; violets dim,
But sweeter than the lids of Juno's eyes
Or Cytherea's breath. 4
- (j) Thinkest thou, for that I insinuate, or toaze from thee thy
business, I am therefore no courtier ? I am courtier cap-a-pe. 2
- (k) A piece many years in doing and now newly performed by that
rare Italian master, Julio Romano. 2
2. Consider the treatment of *tragedy*, with special reference to
Faustus and *King Lear*. 8

Or,

Discuss Shakespeare's treatment of *comedy*.

3. Compare the characters of Cordelia and Perdita. 8
4. Write a short study of *Jealousy*, as dealt with by Shakespeare. 8

Or,

Consider Shakespeare's plays with reference to folklore, folk-song,
and folk-tales.

5. What do you know of the history of the Faust-legend, and its
place in literature ? 8
6. Discuss, with reference to any particular play, Shakespeare's
method of using his sources. 8
7. Illustrate and discuss the following judgment :— 8
'Such are Falstaff's wit, humour, good temper, and ready resource,
that we are compelled to forget or forgive both his defects and his
faults, his age or his corpulence, his lying or his cowardice.'
8. Explain the following :— 5
(a) For Oldeastle died a martyr, and this is not the man.
(b) My father called me Autolyceus.
(c) Three cozen-germans that has cozened all the hosts of Readins,
of Maidenhead, of Colebrook, of money.
9. Discuss Shakespeare's use of the following words, and add
etymological notes :—*nuncle*, *commodities*, *axillades*, *to boot*, *Ephesians*,
old Utis, *sherrie-sack*, *bylbo*, *ouphe*, *gillyvors*, *purchase*. 8
10. Discuss any four textual problems in the specified plays. 4

ENGLISH.

SECOND PAPER.

POETRY.

Examiner—N. L. HALLWARD, ESQ., M.A.

Candidates must give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Sketch more fully *three* of the persons of whom it is said respectively :— 6

- (a) And bisily gau for the soules preye
Of hem that gaf him wher-with to scoleye.
- (b) And yet he had a thombe of gold, pardee.
- (c) (We preyden him also)
...that he wolde been our governour,
And of our tales fuge and reportour.
- (d) The goute lette hir no-thing for to daunce,
No poplexye shente nat hir heed.

2. Contrast, generally, *The Knight's Tale* with the other two 4
pieces prescribed.

3. Rewrite *four* of the following pieces, changing the language. 15
spelling, and order, where modern usage requires :—

- (a) No-thing ne knew he that it was Arcite :
God wot he wolde have trowed it ful lyte.
But soth is seyde, gon sithen many yeres.
That feold hath eyen, and the wode hath eres
It is ful fair a man to here him evene,
For al-day meteth men at unset stevene.
- (b) Al be that thilke tyme they were unborn,
Yet was hir deoth depeynted ther-biforn.
By manasinge of Mars, right by figure :
So was it shewed in that portreiture
As is depeynted in the sterres above,
Who shal be slayn or elles deed for love.
- (c) Tho were the gates shet, and cried was loude :
' Do now your devoir, yonge knightes proude !'
The heraudes lefte hir priking up and doun ;
Now ringen trompes loude and clarioun ;
Ther is nanore to seyn but west and est
In goon the speres ful sadly in arest.
- (d) Of man and woman seen we wel also,
That nodeth in oon of thise termes two,
This is to seyn, in youthe or elles age,
He moot ben deed, the king as shal a page ;
Som in his bed, som in the depe see,
Thanne may I seyn that al this thing moot deye.
- (e) And right anon, ministres of that toun
Han hent the carter, and so sore him pynded,
And eek the hostiler so sore engyned,

That they biknewe hir wikkednesse anoon,
And were anhangen by the nekke-boon.

Either,

4. Describe and illustrate several aspects of the influence of Norman French manifest in the English of Chaucer. 7

Or,

- From the standpoint of the historical student of English, add notes to :— 7

- (a) The varieties of the *relative* found in Chaucer.
(b) The words italicized in the following lines :—
He was a *verray parfit* gentil knight.
In termes hadde he *caas* and domes *alle*,
Of *whiche* two, Arcita *hight* that oon,
And that *other* knight hight Palamon.

5. In connexion with Spenser's *Shepheards Calendar*, discuss Spenser's poetic affectations. 6

Either,

6. By a close paraphrase make clear the meaning and reference of the following lines :— 9

Piers. Those faytours little regarden their charge,
While they, letting their sheepe runne at large,
Passen their time, that should be sparely spent,
In lustihede and wanton meryment.
Thilke same bene shepheardes for the Devils stedde.

But they bene hyred for little pay
Of other, that caren as little as they
What fallen the flocke, so they han the fleece,
And get all the gayne, paying but a peece.

Indicate how other English poets have been inspired by a similar state of things or by an opposite picture. Scan the first two lines.

Or,

- By a close paraphrase make clear the meaning and reference of the following lines from *Aeglogue II, Februarie*. 9

For yongth is a bubble blown up with breath,
Whose witte is weakenesse, whose wago is death,
Whose way is wildernesse, whose ynnne Penaunce,
And stoope-gallaunt Age, the hoste of Greevaunce.
But shall I tel thee a tale of truth,
Which I cond of Tityrus in my youth,
Keeping his sheepe on the hils of Kent ?

How are these lines associable with Spenser and with February ? Scan the first two lines.

Either,

7. In the case of each temptation, Milton makes large additions to the original narrative. Discuss the poetic effect of these additions and their general agreement or incongruity with the original narrative. 6

Or,

In many ways, Milton's *Paradise Regained* is more human than his *Paradise Lost*, and therefrom in part may arise its inferiority. 6
 Explain and illustrate that statement.

8. Add the necessary notes to the following passages— 8

- (a) No more shalt thou by oracling abuse
 The Gentiles ; henceforth oracles are ceas'd,
 And thou no more with pomp and sacrifice
 Shalt be inquir'd at Delphos or elsewhere,
 At least in vain, for they shall find thee mute.
- (b) (Thy life hath yet been private)
 Empires, and monarchs, and their radiant courts,
 Best school of best experience, quickest insight
 In all things that to greatest actions lead.
 The wisest, unexperienc'd, will be ever
 Timorous and loth, with novice modesty.
 As he who seeking asses found a kingdom,
 Irresolute, unhardy, unadvent'rous.

Show that the passages are echoes from Milton's earlier poetry and from his political life, respectively.

Either,

9. What excellences of matter, treatment, and form did Dryden himself perceive in his poem *Annus Mirabilis*. Give your own estimate. 5

Or,

Dryden lived too near the actual occurrences and too near the court when he wrote *Astrea Redux* and *Annus Mirabilis*. Justify the statement or give your own view, in either case referring to details of the poems. 5

10. Explain :— 5

- (a) [*Astrea Redux*.]
 Nor could his acts too close a vizard wear,
 To 'scape their eyes whom guilt had taught to fear,
 And guard with caution that polluted nest,
 Whence Legion twice before was dispossess.
- (b) [*Annus Mirabilis*.]
 Let Munster's prelate ever be accurst,
 In whom we seek the German faith in vain :
 Alas ! that he should teach the English first,
 That fraud and avarice in the church could reign !
- (c) Each element His dread command obeys.
 Who makes or ruins with a smile or frown :
 Who as by one He did our nation raise,
 So now He with another pulls us down.

11. Assuming that Pope's rhymes are perfect, show that in a number of cases the pronunciation of English has changed since his day. 3

12. Show the place of the thought of these lines in the argument of the first Epistle of the *Essay on Man* and also in the argument of the second. 6

Better for us, perhaps, it might appear,
 Were there all harmony, all virtue here ;
 That never air or ocean felt the wind,

That never passion discompos'd the mind.
But all subsists by elemental strife ;
And passions are the elements of life.

Either,

13. Three Christmas Eves and one New Year's Eve are introduced in succession in *In Memoriam*. Describe the successive moods of the poet as they manifest themselves in connexion with these days, and quote illustrative lines from each day's cantos. 12

Or,

In Memoriam has a Prologue and an Epilogue. Describe these briefly, with quotations, and show their connexion with the general plan of the poem. 12

14. Rewrite the following stanzas in simple idiomatic prose, supplementing with notes where needful to make the sense and application clear. 8

- (a) Old warder of these buried bones,
And answering now my random stroke
With fruitful cloud and living smoke,
Dark yew, that graspest at the stones
And dippest toward the dreamless head,
To thee, too, comes the golden hour
When flower is feeling after flower ;
But Sorrow—fixt upon the dead,
And darkening the dark graves of men,—
What whisper'd from her lying lips ?
Thy gloom is kindled at the tips,
And passes into gloom again.
- (b) He fought his doubts and gather'd strength,
He would not make his judgment blind,
He faced the spectres of the mind
And laßt them : thus he came at length
To find a stronger faith his own ;
And Power was with him in the night,
Which makes the darkness and the light,
And dwells not in the light alone,
But in the darkness and the cloud,
As over Sinai's peaks of old,
While Israel made their gods of gold,
Altho' the trumpet blew so loud.

ENGLISH.

THIRD PAPER.

PROSE.

Examiner—H. STEPHEN, ESQ., M.A.

Candidates must give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Give Sidney's and also one other definition of Poetry. 3
2. From direct references, how far may we say that Sidney's *Apologie* was concerned with English poets, dead or then living? Give dates to show exactly the chronological relation of the *Apologie* to the work of the great Elizabethan poets. 6

3. *Either,*

What, according to Sidney, is the due place and proper nature of the comic in Tragedy and of laughter in Comedy? Refer to passages in Shakespeare's plays in illustration of your statements. 8

• *Or,*

What canons for dramatic poetry are by implication laid down in the *Apologie*? What might we assume Shakespeare would say regarding them? 8

4. Make clear the meaning and contextual force of the following:— 6

(a) Among whom as principall challengers step forth the morrall Philosophers: whom, me thinketh, I see comming towards me with a sullen gravity, as though they could not abide vico by day light; . . . with bookes in their hands agaynst glory, whereto they sette theyr names; . . . These men casting larges as they goe of Definitions, Divisions, and Distinctions, with a scornfull interrogative doe soberly aske, whether it bee possible to finde any path so ready to leade a man to vertue, as that which teacheth what vertue is?

(b) *Either,*

I dare undertake. *Orlando Furioso*, or honest King Arthur, will never displease a Souldier: but the quiddity of *Ens* and *Prima materia*, will hardly agree with a Corslet: and therefore, as I said in the beginning, oven Turks and Tartares are delighted with Poets.

Or,

It not being an Art of lyes, but of true doctrine: . . . not of abusing mans witte, but of strengthening mans wit: not banished, but honored by *Plato*: let us rather plant more Laurels for to engarland our Poets heads.

5. How are the following works connected together:—the *Advancement of Learning*, the *Novum Organum*, the *De Augmentis Scientiarum*, and the *Instauratio Magna*? 5

Give the dates of their first publication respectively.

6. Summarize Bacon's position and arguments as a reformer of the seats of learning of his day. 10

7.

Either,

Discuss how far, in his delineation of the sphere of metaphysic, Bacon is a Schoolman or a Modern. 12

Or,

Show where, in his systematic Survey of Learning, Bacon places Knowledge of one's fellowmen and Skill in dealings with them. Give some of Bacon's *wisdom* in these departments, and discuss his attitude as a man to his fellowmen. 12

8. On what grounds did Bacon, concluding his exposition of 'civil knowledge,' 'human philosophy,' and 'philosophy in general,' and describing his exposition as only the 'tuning of the instruments of the Muses,' expect the advent of a third ora of Learning? Make Bacon's references more explicit. 5

9. Explain *four* of the following passages, and show their place in Bacon's exposition :— 18

(a) I refer them also to that which Plato said of his master Socrates, whom he compared to the gallipots of apothecaries, which on the outside had apes and owls and antiques, but contained within sovereign and precious liquors and confections; acknowledging that to an external report he was not without superficial levities and deformities, but was inwardly replenished with excellent virtues and powers.

(b) We see the gift or endowment of wisdom and learning, both in Salomon's petition and in God's assent thereunto, preferred before all other terrene and temporal felicity. By virtue of which grant or donative of God Salomon became enabled not only to write those excellent parables or aphorisms concerning divine and moral philosophy; but also to compile a natural history of all verdure, from the cedar upon the mountain to the moss upon the wall (which is but a rudiment between putrefaction and an herb), and also of all things that breathe or move.

(c) Generally let this be a rule, that all partitions of knowledges be accepted rather for lines and veins than for sections and separations; and that the continuance and entireness of knowledge be preserved. For the contrary hereof hath made particular sciences to become barren, shallow, and erroneous . . . So we may see that the opinion of Copernicus touching the rotation of the earth, which astronomy itself cannot correct, because it is not repugnant to any of the *phenomena*, yet natural philosophy may correct.

(d) Therefore, as Aristotle endeavoureth to prove, that in all motion there is some point quiescent; and as he elegantly expoundeth the ancient fable of Atlas . . . to be meant of the poles or axle-tree of heaven, whereupon the conversion is accomplished: so assuredly men have a desire to have an Atlas or axle-tree within to keep them from fluctuation, which is like to a perpetual peril of falling. Therefore, men did hasten to set down some principles about which the variety of their disputations might turn.

(e) For, as the fable gooth of the basilisk, that if he see you first, you die for it; but if you see him first, he dieth; so is it with deceits and evil arts; which, if they be first espied they leese their life; but if they prevent, they endanger. So that we are much beholden to Machiavel and others, that write what men do, and not what they ought to do. For it is not possible to join serpentine wisdom with the columbine innocency, except men know exactly all the conditions of the serpent.

10. In the *Religio Medici*, Sir Thomas Browne's ideas are quaint 6

no less than his style. Explain both assertions, and illustrate from other passages than any quoted below.

11. Sketch the character of Sir Thomas Browne from the following autobiographical notes, making further reference to passages in the *Religio Medici* :— 12

'Methinks there be not impossibilities enough in Religion for an active faith.'

'This hath ever made me suspect the efficacy of reliques.'

'It is a riddle to me, how this story of Oracles hath not worm'd out of the World that doubtful conceit of Spirits and Witches.'

'I find my growing judgment daily instruct me how to be better, but my untamed affections and confirmed vitiosity makes me daily do worse.'

'My Conscience would give me the lye if I should say I absolutely detest or hate any essence but the Devil.'

Even that vulgar and Tavern-Musick . . . strikes in the . . . a profound contemplation of the First Composer.'

12. Make clear the meaning, allusions, and general setting of three of the following passages :— 9

(a) To see ourselves again, we need not look for Plato's year : every man is not only himself ; there hath been many Diogenes, and as many Timons, though but few of that name.

(b) Of those three great inventions in Germany, there are two which are not without their incommunities, and 'tis disputable whether they exceed not their use and commodities. 'Tis not a melancholy *Utinam* of my own, but the desires of better heads, that there were a general Synod ; not to unite the incompatible difference of Religion, but for the benefit of learning, to reduce it as it lay at first, in a few and solid Authors.

(c) It is an honourable object to see the reasons of other men wear our Liveries, and their borrowed understandings do homage to the bounty of ours ; it is the cheapest way of beneficence, and, like the natural charity of the Sun, illuminates another without obscuring itself. To be reserved and caitiff in this part of goodness, is the sordest piece of covetousness.

(d) I cannot think that Homer pin'd away upon the riddle of the fishermen ; or that Aristotle, who understood the uncertainty of knowledge, and confessed so often the reason of man too weak for the works of nature, did ever drown himself upon the flux and reflux of Euripus.

ENGLISH.

FOURTH PAPER.

PROSE.

Examiner—H. STEPHEN, ESQ., M.A.

Candidates must give their answers in their own words as far as practicable in all subjects.

The figures in the margin indicate full marks.

1. How does Butler show that our organs of sense and our limbs are merely instruments which the living persons, ourselves, make use of to perceive and move with ? 8

2. Show that our trial in our temporal capacity resembles our trial in our religious capacity. 6

Or,

Show that in this life virtue and vice are rewarded and punished as such.

3. Refute the objection brought against the whole nature of moral discipline that, so far as a course of behaviour, materially virtuous, proceeds from hope and fear, so far it is only a discipline and strengthening of self-love. 6

4. What reason is there for thinking that the moral government of God is a scheme incomprehensible by man? 6

5. Under what circumstances did St. Edmund's Town and Monastery come to be founded? Describe the election of Abbot Sampson. 8

Or,

Give a full account of the chronicle of Jocelyn of Brakelond. What is known about 'Landlord Edmund'? 6

6. Give in your own language Carlyle's estimate of William the Conqueror. 5

7. What lesson does Carlyle draw from the acknowledged efficiency of an organized military force? 5

8. What does Huxley consider to be the special advantages of scientific training as an educational discipline? 8

9. Why should children be taught to draw? 5

Or,

Why is the term Applied Science objectionable?

10. Give the substance of Huxley's views on Examination. 5

11. Whom do you consider to be the real hero of *The Professor at the Breakfast Table*? Give reasons for your opinion. 6

Or,

What appear to you to be the distinguishing characteristics of American humour as exemplified in *The Professor at the Breakfast Table*?

12. Compare the life of a young Greek with the life of a young American. 6

13. What part does Atterbury play in *Esmond*? Describe the character of Prince Eugene. 6

Or,

Describe in your own language the Battle of Blenheim.

14. Comment on the following passages:— 20

(a) Thou art not a mere building Beaver or two-legged Cotton-spider.

(b) The Epic verily is not *Arms and the Man*, but *Tools and the Man*.

(c) Vagrant Sam Slicks who rove over the Earth doing 'strokes of trade.'

(d) The Demiurgus Dollar is dethroned.

(e) You are the gastronomic metropolis of the Union.

(f) Apology is only egotism wrong side out.

(g) Crows generally know about how far boys can 'shin up,' and set their household establishments above that high-water-mark.

(h) How many ghosts that 'thick men's blood with cold' prove to be shirts hung out to dry!

(i) 'Tis a wonder to any one who looks back at the history of the Stuart family to think how they kicked their crowns away from

them ; how they flung away chances after chances ; what treasures of loyalty they dissipated ; and how fatally they were bent on consuming their own ruin.

(k) Well, honest Harry, go and attack windmills ; perhaps thou art not more mad than other people.

ENGLISH.

FIFTH PAPER.

GENERAL PAPER ON LITERATURE.

Examiner—N. L. HALLWARD, ESQ., M.A.

Candidates must give their answers in their own words as far as practicable in all subjects.

The figures in the margin indicate full marks.

1. What is the subject of the ballad of the *Nut-Brown Maid* ? 4
2. Explain fully the allusion in the following lines :— 5

‘ More pleased that, in a barbarous age,
He gave rude Scotland Virgil’s page,
Than that beneath his rule he held
The bishopric of fair Dunkeld.’

3. Estimate the literary value of Herrick or Waller. 6
4. Give a short abstract of the first part of the *Pilgrim’s Progress* 10
by John Bunyan. What do you consider to be the merits of Bunyan’s
style ? Compare him with any other writer, ancient or modern.

Or,

Write a short life of the principal author of the *Rehearsal*. Who
is meant by Bayes ? How did Bayes take his revenge ?

5. Describe the *Hudibras* of Samuel Butler. 6

Or,

Analyse two of Webster’s dramas.

6. Who were the Cambridge Platonists ? 6

Or,

Wherein does the charm of Isaac Walton’s writings seem to you
to consist ?

7. Give some account of De Foe and his works. 8
8. Who were the principal contributors to the *Spectator* ? Des- 8
cribe the members of the Spectator Club.

Or,

Give some account of three of the contributors to the *Anti-Jacobin*.
What was the object of this paper ?

9. Compare the styles of Hume, Robertson, and Gibbon. 8
10. Under what circumstances was the *Task* written ? Give 9
some account of its component parts. Mention three other poems by
the same author.

Or,

Explain fully the allusion in the following lines :—

‘ When Little’s leadless pistol met his eye,
And Bow-street myrmidons stood laughing by.’

Give some account of the life and writings of the author referred to by Byron under the name of Little.

11. By what two authors were the *Rejected Addresses* written ?

4

Or,

In what metre is the *Castle of Indolence* written ? Mention three of the author’s friends described in that poem.

12. Give some account of Thomas Hood and his writings.

6

Or,

Give some account of Leigh Hunt and his associates.

13. Write a very brief notice of the authors of the following works :—*The Kyngis Quhair*, *Ralph Roister Doister*, *The Virgin Martyr*, *Alexander and Campaspe*, *Nosce Teipsum*, *Cooper’s Hill*, *The Cotter’s Saturday Night*, *Aurora Leigh*, *Phantasmion*, *Sordello*.

10

14. In what works of what authors do the following characters appear :—Mrs. Gamp, The Marquis of Steyne, Mark Tapley, Jonathan Oldbuck, Caleb Balderstone, Mrs. Poyser, Godfrey Cass, Blifil. Lovelace Dr. Primrose ?

10

ENGLISH.

SIXTH PAPER.

ANGLO-SAXON, HISTORICAL GRAMMAR, AND ESSAY.

Examiner—H. M. PERCIVAL, ESQ., M.A.

Candidates must give their answers in their own words as far as practicable in all subjects.

The figures in the margin indicate full marks.

1. ‘Translate into Modern English :—

8

(a) þā cwæp hē and-swariende hiera ānum : ‘ Ðalā þū frsōnd, ne dō ic þe nānne tsonan ; hū, ne cōme, þū tō mē tō wyrtenne wip ānum peninge ? Nim þæt þīn is, and gā ; ic wile þissum ytemestum sellan eall swā miðel swā þē. Oppe ne mōt ic dōn þæt ic wile ? Hwæper þe þīn sage mænfull is for þām þe ic gōd eom ? Swā bæp þa fyrrestan ytemeste, and þā ytemestan fyrreste : sōþlice maniġe sind ġe-clipode, and fēa ġe-corene.

(b) Sēo cwēn hæfde ġe-tæcninge þære hālgan ġe-lapunge ealles cristenes folces, þe cōm tō þām ġe-sibbsuman Crīste tō ġe-hierenne his wīsdōm and þā god-spellican lāre þa hē ā-stealde, and be on-lichtunge þæs sōþan ġe-lsāfan, and be þām tōweardan dōme, be ūrra sǣwle und-ǣadlicnesse, and be hyhte and wuldre þæs ġe-mænelicān æristes.

(c) Hēr fōr se here of East-ġnglūm ofer Humbre-mūpan tō Eofor-wic-beastre on Norþ-hymbre. And þær wæs miðel un-ġepwāernes þære

þōde be'twix him selfum, and hie hæfdon hiera cyning ā worpenne
Csbryht, and un-gecyndne cyning under'fēngon Ællan

2. Write notes, philological and grammatical, on the following 6
words :—

(a) cōme, wyrðenne, fīstemestum, sǣllan, mǣnfull, in passage (a) ;

(b) ā-stealde, ārra, ge'mænelican, in passage (b) ;

(c) hƿerc, un-gecyndne, under'fēngon, in passage (c).

3. Explain carefully the terms *mutation*, *gradation*, and *breaking*. 10
Discuss and illustrate, with special reference to Anglo-Saxon verbs, strong and weak.

4. Write out, in full, the declension of the third personal pronoun 8
in Anglo-Saxon, and discuss the forms in relation to (a) Chaucerian, and (b) Modern English.

5. What do you know of the borrowings in Old English (Anglo- 4
Saxon) from other languages ?

6. Give a summary account of inflectional levelling in English. 6

7. Discuss the terms—*Turanian*, *Indo-European*, *Teutonic*. 3

8. Give an historical survey of the formation of adverbs 5
in English.

9. Write an essay on one of the following subjects :— 50

(a) The problem of English spelling ;

(b) Synonyms ;

(c) The language of poetry ;

(d) A world-language.

SANSKRIT.—GROUP A.

FIRST PAPER.

FIRST HALF.

Examiner—PANDIT RAMNATH TARKARATNA.

The figures in the margin indicate full marks.

(प्रश्नानां प्रथमपञ्चकस्य द्वितीयपञ्चकस्य वा उत्तरादि गौर्वाङ्-
गिरा लेख्यानि ।)

१ ।

गतया निरन्तराने-तन्मयुरः

परिनाभि नूनमवमुच्य वारिजम् ।

परिनाभिर्निपातनामया-

तन्मयुरोऽहं सुरविद्विषः श्रिया ॥

श्रियं क्व जिहति सुरारिजम्ने

हृषयामनं विनययामनं तदा ।

यश्चैव दीर्घविजितानरुम-

प्रसवेन वासतश्चिरोक्ते कृपः ॥

- (क) श्लोको व्याख्यायेताम् । प्रथमश्लोकस्य किं तात्पर्यम् ? ८
 (ख) रेखाङ्कितवाचनशब्दस्य नञ् इत्यर्थः किं शब्दो वा लङ्घ्यो
 वा व्यङ्ग्यो वेति ब्रूहि । तत्र तत्र युक्तिरपि श्रीमता प्रदर्शनीया । ५
 (ग) वामनावतारकथा पाण्डितातहरणकथा वा कीर्तनीया । ७

२ । अष्टं कलेवलं पङ्क्तिं कटुन्ति दीहगोमाश्रौ ।
 अष्टं पि ब्रूलखरगं वेशं विश्र अट्टहाश्रय ॥

(क) श्लोकस्यार्थः कीदृशः ? ४

(ख) भाषया प्राकृतेषु कतमयावौ गुम्फितः ? कोऽत्र रसः ?
 कस्यस्य स्यादौ भावः ? को चात्र विभावानुभावसञ्चारिभावाः ? को नु
 वालङ्कारः ? ८

३ । किं खलु प्रकरस्य लक्षणम् ? कटिकाभेत्यस्य नाम-
 करणे किं बीजम् ? ४

४ । आश्चर्यम् — — — ।

स्वप्नः सोदर्यायाः कथमिव निकारं दृश्यमुखः
 तथा भूयो भूयः स्वजनविनिपातञ्च सहते ।
 मदाम्बो मायावौ प्रभुरमितवीर्योऽन्तिकचरः
 सपन्नः कष्टं नो निपुणमनुपाल्या हि शिशवः ॥

(क) कीदृशस्तावदस्यार्थः । ३

(ख) भूयो भूय इति कथं वीक्षा ? किन्नामान्न कृन्दः ? किं तस्य
 लक्षणम् ? सन्दर्भेऽस्मिन् कश्चिद्विशेषोऽस्ति न वा ? अस्ति चेत् प्रदर्शय ? ७

५ । कादम्बरीपूर्वाङ्गस्य संक्षेपेण कथासारं प्रकीर्तय । ११

१ । रथमास्थितस्य च पुरामिवस्तिनः
 तिष्ठन्तां पुरामिव रिपोर्मुहुरिदम् ।
 धर्मोऽस्ति पुराणाभावितः
 स्वयमादित प्रवयणं प्रजापतिः ॥
 दक्षिणीयमवगम्य पंक्तिः
 पंक्तिपावनमथ द्विजव्रजम् ।
 दक्षिणः क्षितिपतिर्व्यशिश्रवत्
 दक्षिणाः सदक्षि राजसूयकौः ॥

(क) सन्दर्भयोर्व्याख्या कौदुशी ?

६

(ख) रथमाख्यतस्मैत्यत्र कथं द्वितीया ? धर्मभूतिरित्यस्य किं विग्रहवाक्यम् ? व्याश्रयवाक्यस्य कौदुशी व्युत्पत्तिः । राक्षस्यकीति शब्दं व्युत्पादय ।

४

(ग) ब्रह्मणः शिवसारं करणे किं प्रमाणम् ? किं तावत् पंक्ति-पावनलक्षणम् ?

५

२ । — । एतुं खेदं ता कथं एवो अवरो ?

एतैरेव यदा गच्छेन्नुमलिनैराधमातलम्बोदरेः

गर्जन्निः सतङ्गिह्लाकाशबलैर्मघैः सशस्त्रं मनः ।

तत् किं प्रोक्षितभर्तृबध्यपटहो हाहा हताशो बकः

प्रावृट् प्रावृडिति ब्रवीति शठघोः सारं क्षते प्रक्षिपन् ॥

(क) एतस्य वक्तृबोद्धव्यौ निरूप्य व्याख्या विधेया । कस्यात्र रसः ?

४

बलाकशब्दस्य प्रोक्षितभर्तृशब्दस्य च साधुत्वमसाधुत्वं वेति सप्र-
माणं विबोधय ?

३

३ । कदा कथं वा वसन्तसेनाया आर्यकस्य च प्रबहणविपर्ययः

संदुतः ? कौदुशी वा तस्य परिणतिः ?

६

४ । तुरीयो श्लेष मेधोऽग्निराज्ञायः पञ्चमोऽप्यवा ।

अथवा अङ्गुलं तीर्थं धर्मो वा भूर्तिःशृङ्गः ॥

सूतः । साङ्काय्यनाथ ! एवमेतत् । यस्य भगवत्स्वैशङ्कवं श्रौनः-

श्लेषं रम्भास्तम्भनं चेत्यपरिमेयमाः व्यञ्जातमाख्यानविद आचक्षते ।

(क) सन्दर्भोऽयं व्याख्यायतामायुष्मता । कस्यात्रालङ्कारः ?

४

(ख) त्रैशङ्कवं, श्रौनःश्लेषं, रम्भास्तम्भनमित्येतेषामेकतमस्यैव पौरा-
णसाख्यानमुच्यताम् । कुत्र खलु साङ्काय्यनगरम् ? पुरा किल कलाद्या-
धिपतिरासीत् ?

७

५ । ततोऽवतैर्य तदुशाखायां बद्धा तुरङ्गमसु उपसृत्य भगवते
भक्त्या प्रब्रूय त्रिलोचनाय तामेव दिव्यप्रोक्षितमनिमेषपद्मणा निखल-
निबल्ललक्ष्येण चक्षुषा पुनर्निरूपयामास । उदपादि चास्य तस्या रूपसम्पदा
कान्त्या प्रशान्त्या चाविर्भूतविषयस्य मनसि आहो जगति जन्तूनाम-
बन्धुर्हितोपनतान्नापतन्ति वृत्तस्ततोः ।

(क) कस्यैवमुक्तिः ? कः खलु भगवत्स्वैशङ्कवाच्यः ? त्रिलोचना-

येति कथं चतुर्थी ? उदपादीति क्रियापदस्य कर्मपदं प्रदर्शनीयम् ?
असमर्थितोपनतानीत्यस्य कोऽर्थः ?

(ख) कान्तिरूपयोरभिन्नत्वं भिन्नत्वं वा ? अत्र खल्वभिन्नत्वे कौतुको
दोष इति भिन्नत्वे च तयोः प्रत्येकं लक्षणमुल्लिख्यताम् ।

FIRST PAPER.

SECOND HALF.

Examiner—PANDIT ASUTOSH SASTRI, M.A.

1. Render the following extract into English, as literally as possible :—

अनेन च समयेन परिच्यतो दिवसः । ज्ञानोत्थितेन मुनिरुज्ज्वलार्ध-
विधिसुपपादयता यः क्षितितले दत्तसमम्बरतलगतः साक्षादिव रक्त-
चन्दनाङ्गरागं रविरुदयदृष्ट । ऊर्ध्वमुखैर्कबिम्बविनिहितवृष्टिभिरुप-
पेक्षपोधनैरिव परिपीयमानतेजःप्रसरो रिलातपोदयस्यस्यनिमानमभ-
जत् । उद्यत्समर्थिसार्थस्यार्थपरिजिह्वीयेय संकुतपादः पारादतचरकपा-
ठलरागोरविरम्बरतलादलम्बत । आलोहितान्धुजालं जलमयनगतस्य
मधुमिदो विगलन्मधुधारमिव नाभिनलिनं प्रतिमागतमपरार्णव सूर्य-
मण्डलमलम्बत । विहाय धरणीतलमुन्मुच्य कमलिनौदनानि शकुनय-
ज्वर विवसादधानं तपोवनतस्रिखरेषु पर्वताग्रेषु च रविकिरणाः
स्फितिमकुर्वत ।

Point out the figures of speech (चलङ्कार) in the last sentence of the above extract.

2. Write a full explanatory commentary, in the style of Mallinātha, upon one of the following *ślokas*, adding what is called *śābāṣ* or *exordium* :—

(a) न ह्यवर्णयन् तनुः परं ननु किं वागपि तादृको तथा ।

न परं पथि पक्षपातितानवलम्बे किमु मादृशेऽपि वा ॥

(b) बन्धाय दिव्ये न तिरस्त्रि कश्चिद्

पात्रादिरावाहितपोरुषः स्थात् ।

एकं विना मादृशि तद्गच्छ

अर्भोगमायं विरलोदयस्य ॥

Derive the bases of the underlined words in *either* of the above 1
śloka.

3. Explain fully the conceit in the following *śloka*, and comment 4
upon what grammatical peculiarity you mark in the second *Pāda*
(foot) by stating the rule of समासः:—

यदगारघटाद्दुःखमखवद्विन्दूपलकुन्दिलापया ।

सुसुचे न पतिव्रतोचिती प्रतिचन्द्रोदयमखगङ्गाया ॥

4. Translate into Sanskrit *any one* of the following three verses 4
and express the meaning of *the same verse*, in English, with clear
reference to the context, explaining the *double entendre*, if any, on
the same:—

(1) कमलायं मणहरायं वि श्रमाहितो विसंवदह ब्रीलं ।

संपुष्पमखलमि वि जाई चन्दे विरुद्राई ॥

(2) जायन्ति तन्तुतिं जहद्विभ्रं मखलं अहिलिहन्ति ।

जे मन्तरकलहपरा ते सप्पणगाहिवे उवग्रन्ति ॥

(3) पाऊण निरवसेसं कुसुमरसं अत्तयो कुसलहाए ।

खं उगिगरेह भमरो अखायं कुणइ तं कण्जं ॥

5. Annotate *any four* of the following, selecting them from the 6
groups as indicated:—

GROUP I.

Any two.

(a) अनुद्वेकः खलु विक्रमालङ्कारः ।

(b) सर्वत्रोदरिकस्य अभ्यवहार्यमेव विषयः ।

(c) यदेवोपनतं दुःखात् सुखं तद् रसवत्तरम् ।

(d) मुनयोऽपि व्याहरन्ति राज्ञा कालस्य कारणम् इति ।

(e) स्वार्थात् सतां गुह्यतरा प्रवयिक्रियेव ।

GROUP II.

Any two.

(f) निर्व्यूढं प्रतिपन्नं वस्तुमु सतामेतद्वि गोव्रतसम् ।

(g) राखं हि राजघम्भानुसिद्धिः सृपतेमहद्वितीतिस्थानः ।

(h) पराग्रतः प्रीतेः कथमित्थं रसं वेत्ति पुरुषः ।

(i) निर्व्यवस्थितस्य सन्तः सदेव निरकुशाः ।

(j) निरीहाणामौशस्तृणमित्थं तिरस्कारिणः ।

(k) गतिः बोद्धायाणां पतनमनुकूलं कलयति ।

(1) In what sense is the underlined expression in (d) used in the original book (सुशारत) ? Refer to or quote, if possible, a *śloka* belonging to the first canto of the *Nishadhaeharita* in which the same principle seems to be adverted to. In what sense is the above expression used by the speaker in the *Vikramorvaśi* ? Against what philosophical doctrine does the passage seem to militate ? 4

(2) Quote from Sanskrit books passages parallel in thought to any two of the above passages. Quote a proverbial passage from Shakespeare parallel in sense to (g) of the above extracts. 4

6. Freely translate into idiomatic Sanskrit :— 7

These are thy glorious works, Parent of good !
 Almighty, thine this universal frame,
 Thus wondrous fair : thyself how wondrous then !
 Unspeakable, who sitt'st above these heavens,
 To us invisible, or dimly seen
 In these thy lowest works ; yet these declare
 Thy goodness beyond thought, and power divine.
 Speak ye who best can tell, ye sons of light,
 Angels, for ye behold Him, and with songs
 And choral symphonies, day without night,
 Circle His throne rejoicing, ye in heaven :
 On earth, join all ye creatures to extol
 Him first, Him last, Him midst, and without end.

7. Answer either (A) or (B) following :— 7

[The answer should be written in English.]

(A) In what points may the *Vikramorvaśi* be compared with the *Sakuntala* ? With reference to the Fourth Act of the *Vikramorvaśi*, Professor Wilson remarked—" This Act is without a parallel in any of the Dramas yet met with." Examine the truth of the above remark.

(B) In what different senses does the word ~~हो~~ seem to be used in the *Mūdrārākṣasa* ? What foreign invaders of India were possibly alluded to by that word ? In the opinion of Telang the *Mūdrārākṣasa* was probably composed about the early part of the eighth century A.D.—while it is laid down by Professor Jacobi that the drama was composed in the year A.D. 860. Discuss the correctness of the above theories.

SANSKRIT (A).

SECOND PAPER.

FIRST HALF.

GRAMMAR.

Examiner—PANDIT BAHUBALLABH SÂSTRĪ.

Candidates should give their answers in their own words as far as practicable.

Answers should be given in Sanskrit.

The figures in the margin indicate full marks.

1. (1) परिमाणमात्रे, द्वौघो द्वौघिः . 6
 - (2) तमपग्रहणं किम्, गङ्गायां घोषः .
 - (3) कृति किं तद्धिते मा भूत् .
- तिष्ठणां पंक्तीनां मध्ये ह्योराशयो वर्णनीयः .

2. कर्तुरीप्षिततमं कर्म . क्रियार्थोपपदस्य च कर्मणि स्थानिनः . 8
आधारोऽधिकरणम् . यस्य च भावेन भावलक्षणम् . यतश्च निर्धारणम् .
एषां सूत्राणां मध्ये चतुर्णां सूत्राणां सोदाहरणा व्याख्या कार्या .

3. 'सर्पिषोऽपि स्यात्' . कश्चात् अपि ह्योऽङ्गात् ? अपि ह्योत्प- 4
पदार्थे सर्पिष इत्यत्र च कथं न द्वितीया ? 'सर्पिषोऽपि स्यात्' इति
समुदायस्य च कोऽर्थः ? एतत् सर्वं सप्रमाणं लिख .

4. समर्थः पदविधिः . पञ्चमानिर्दिष्टं समास उपसर्जनम् . चतुर्थी- 10
तदर्थव्यवहितः खरक्षितः . तद्धितार्थोत्तरपदसमाहारे च . अनेकम-
न्यपदार्थः . श्रुतो विद्यायोनिस्त्वन्वेभ्यः . एषां सूत्राणां मध्ये चतुर्णां
सूत्राणां सोदाहरणा व्याख्या कार्या .

5. 'एतत् सामर्थ्यादेव प्राचीनानां नित्यसमासत्वम्, सुष्पुपा' इति 5
तु न नित्यसमासः, अव्ययमित्यादिसमासविधानाज्ज्ञापकात् . कथं
नित्यसमासत्वं कथं वा न नित्यसमासः ? ज्ञापकं च कथम् ? एतत् सर्वं
सप्रमाणमुपपादय .

6. 'धिगास्तु तृष्णातरलं भवन्मनः समीक्ष्य पक्षान् मम हेमजन्मनः'
'मनुष्यदम्भः कोकिलासापदुःखिताच्चगजनश्रुतिः' .

- (b) उपकृतं बहु तत्र किमुच्यते
 सुजनता प्रथिता भवता परम् ।
 विदधदौदृग्मेव सदा सखे
 सुखितमास्व ततः शरदां श्रतम् ॥

6. What is Mammata's definition of रस ? State the opinions of भट्टसोपट and भट्टनायक on the nature of रस . How does Mammata classify it ? (Give examples. 5

7. Define लक्षणा and mention the names of all the *alamkaras* that are founded on the resemblance of things, express or implied. 5

8. Define and distinguish between प्रतिबन्धना, इडाका, and निर्दोषा, and give examples. 5

9. Define दोष or rhetorical defect, and point out the rhetorical defects in the following, stating your reasons in each case :— 5

- (a) अग्रन्ध्यश्लोकस्य विहन्तुरापदां
 भवन्ति वय्याः स्वयमेव वेद्मिनः ।
 अमर्षशून्येन जनस्य जन्तुना
 न जातहाईन न विद्विषादरः ॥

- (b) दिगम्बरत्वेन निवेदितं वसु ।
 बरेषु यद्वाससुगात्ति सुग्यते
 तदस्ति किं व्यसमपि त्रिलोचने ॥

10. Point out and define the *alamkaras* in the following :— 5

- (a) जितेन्द्रियत्वं विनयस्य कारणम्
 गुणप्रकर्षो विनयादवाप्यते ।
 गुणप्रकर्षस्य जनोऽनुरज्यते
 जनानुरागप्रभवा हि सन्पदः ॥
- (b) आकाशे वारि परितः सरितां मुखेभ्यः
 किं तावदूर्जितमनेन दुर्योधन ।
 क्षारीकृतञ्च वद्वद्वद्वने हुतञ्च
 पातालकुक्षिविवरे विनिवेशितञ्च ॥

11. Define Grimm's Law, and illustrate its operation with special reference to Sanskrit and English. 5

12. Define Phonetic Decay and Dialectic Growth, and give examples. 5

SANSKRIT (A).

THIRD PAPER.

FIRST HALF.

Examiner—MAHAMAHOPADHYAYA CHANDRAKANTA TARKA-
LANKAR.

The candidates are required to write in their own language as far as possible.

The figures in the margin indicate full marks.

३ य. पत्रं । भगवद्गीतासु प्रश्नाः ।

पञ्चानां प्रश्नानामुत्तराणि लेख्यानि ।

- १ । या निश्चा सर्वभूतानां तस्यां जागर्ति संयमी ।
प्रश्नां जाग्रति भूतानि सा निश्चा पश्यतो मुनेः ॥
पञ्चेमानि महाबाहो कारणानि निबोध मे ।
सांख्ये कृतान्ते प्रोक्तानि विद्वये सर्वकर्मणां ॥

अनयोरेकः श्लोको विशदोक्त्य व्याख्यायतां । प्रथमश्लोकार्थं का

उपपत्तिः ? द्वितीयश्लोके इमान्तीति कानि ? १०

२ । का नाम नैष्कर्म्यविद्विः ? सा कथं प्राप्यते ? तां प्राप्तः कथं
वा ब्रह्म प्राप्नोति ? १०

३ । कथं शुणातीतो भवति ? किं तस्य लक्षणं क आचारः ? १०

४ । कानि शारीरवाचिकमानसानि तर्पाणि ? कतिविधानि वा ?
काश्च ता विधाः ? १०

५ । कोऽसौ योगः ? कया वा रीत्या सोऽभ्यसनीयः ? १०

६ । कानि ज्ञानसाधनानि किं वा ज्ञेयं ? १०

७ । बुद्धेर्दृष्टेस्तु कति भेदाः के च ते ? १०

THIRD PAPER.

SECOND HALF.

MANU.

Examiner—MAHAMAHOPADHYAYA HARAPRASAD SASTRI, M.A.

1. When was the work entitled Manu Samhitā put into its present form ? Why was it named after Manu ? 10

Or

On what previous materials was it based, and to what extent ? 10

2. Explain fully why two different accounts of the creation have been given in the first chapter of Manu. 5

Or

Enumerate the principal topics treated of in that work.

3. Describe the salient points in a student's life in ancient India. 10

Or

The different systems of marriage mentioned by Manu, with their strong and their weak points.

4. Enumerate the eighteen Titles of Vivāda, and enunciate four of them. 10

Or

Describe fully the procedure of conducting law-suits as given in Manu.

5. How were taxes assessed on different trades and occupations ?

Or

What were the principal duties of the king ?

6. How do you reconcile the statement in Manu that the father should not accept any *sulka* from the bridegroom, with the statement that in Arsa form of marriage one cow is to be accepted as *sulka* ? 5

Or

Who is to be considered as worthy of higher reverence, the father, the mother, or the teacher of the Vedas ?

7. What is a legally constituted Pāṣād ?

Or

What is Brahmajana according to Manu ?

Or

Who are to be considered as *atithis* and who not ?

Or

What brahmanas are to be accepted in the *paṭiki* in a *Sraddha* ?

SANSKRIT (A).

FOURTH PAPER.

FIRST HALF.

RIGVEDA.

Examiner—PANDIT BAHUBALLABH SÂSTRĪ.

Candidates should give their answers in their own words as far as practicable.

Answers should be given in Sanskrit.

The figures in the margin indicate full marks.

1.

- (1) चित्रं देवानां यन्मूर्तिरुपमा ।
चक्षुर्मित्रस्य वक्ष्यन्माग्रे ।
आप्रा यावा पृथिवी अन्तरिक्षं
सूर्य आत्मा जगतस्तस्युच्यते ॥
- (2) अद्या देवा उदिता सूर्यस्य
निरहंसः पिपृतानिरवद्यात् ।
तन्नो मित्रो वरुणो मामहन्ता-
मदितिः सिन्धुः पृथिवी उत द्यौः ॥
- (3) येनेमा विश्वा च्यवना कृतानि
यो दासं वर्धमधरं गुहाकः ।
सन्नीव यो जिगीवां सप्तमाद-
वयः पुष्टानि स जनास इन्द्रः ॥
- (4) दाशराक्षे परियत्ताय विश्वतः
सुदास इन्द्रावरुणावशिक्षतम् ।
क्षित्यब्धौ यत्र नमसा कपर्दिनो
धियां धीवन्तो असपन्त तृक्षवः ॥
- (5) यस्मै नो मातुं प्रथमो विवेद
नेहा मयूतिरपभर्त वा उ ।
यत्रा नः पूर्वे पितरः परेयु-
रेना यज्ञानाः पथा अनु स्याः ॥
- (6) यं क्रन्वन्ती अवसा तक्षभाषि
अन्येष्वेतां मनसा रेक्षमाने ।

यत्राद्यि सूर उदितो विभाति
कसौ देवाय हविषा विधेम ॥

(a) एषां मन्त्राणां मध्ये चतुर्णां मन्त्राणां व्याख्या कार्या . 8

(b) एषां मन्त्राणां मध्ये त्रयाणां मन्त्राणां विनियोगम् अस्मिं च प्रदर्शय . 5

(c) पिपृता . अकः . जनासः . पाजः . मर्यः . जीवसे . वोचावहे . दिप्सन्ति . 8

एषां पदानां मध्ये चतुर्णां पदानां सिद्धिः सूत्राख्यपन्यस्य प्रदर्शनीया .

श्रीमतां पठनीये ऋग्वेदांशे चातुर्वर्ण्यविभागप्रतिपादकः कस्मिन् मन्त्रोऽस्ति न वा, यदि स्यात् स च कः, तस्य को वा वाक्यार्थः . 6

3. नरः . कर्त्ता . हिरण्यम् . वस्त . कर्त्ता . गावः . अहिम् गोषणिम् . 8

एषां पदानां मध्ये षट्पदानि पठनीयांशे वेदे कस्मिन्नर्थे प्रयुक्तानि कथं च तेषां पदानां सिद्धिः .

4. तत् सूर्यस्य देवत्वं तन्महत्त्वं 3

मथा कर्त्तव्यं तत् संजभार ।

यदेदयुक्तं हरितः सधस्या-

दादात्री वासस्तनुते सिमसै ॥

अस्य मन्त्रस्य कोऽर्थः सप्रमाणं लिख .

5. एचोऽतस्तिष्ठः . जनिता मन्त्रे . विभासजोऽकृन्दसि . इष्टीन- 12
मिति च . कषेऽकृन्दसि . उभयपक्षे . एषां सूत्राणां मध्ये चतुर्णां सूत्राणां व्याख्या कार्या .

FOURTH PAPER.

SECOND HALF.

Examiner—MAHAMAHOPADHYAYA CHANDRAKANTA TARKALANKARA.

8 र्थे पत्रम् । कठोपनिषदः प्रश्नाः ।

पञ्चानां प्रश्नानामुत्तराणि लेख्यानि ।

9 । कोऽसौ भोक्ता ? का तत्रोपपत्तिरादर्शिता भाष्यकारेण ? 10

२। का नाम परा गतिः ? कथं वा सा प्राप्यते । का चैयं गतिर्नाम ? १०

३। यथोदकं शुद्धे शुद्धमासिक्तं तादृगेव भवति ।
एवं मुनेर्विज्ञानत आत्मा भवति गौतम ॥
तां योगमिति मन्यन्ते स्थिरामिन्द्रियधारणां ।
अग्रमस्तुतदा भवति योगो हि प्रभवाम्ययौ ॥

अनयोर्मन्त्रयोरेको मन्त्रो भाष्यानुसारेण व्याख्यायतां । प्रथम-
मन्त्रे उदकदूषणान्तेन जीवपरमात्मनोर्भेदापत्तिः कथं न भवति ? द्विती-
यमन्त्रे तामिति कां ? कया वा रीत्या योगस्य योगत्वं भाष्यकारेणोक्तं ? १०

४। देहादिसंघातव्यतिरिक्ते आत्मनि किं प्रमाणमादर्शितं भाष्य-
कारेण ? १०

५। ज्ञेयस्यातिसूक्ष्मत्वं कया रीत्या समर्थितं ? किं वा ज्ञेयं ? १०

६। श्रुतं पिबन्तावित्यस्या बल्लगाः कीदृशः संबन्धो वर्णितो भाष्य-
कारेण ? श्रुतं पिबन्ताविति मन्त्रस्य वा कीदृशोऽर्थः ? १०

७। कार्यस्य सन्मुखत्वं कया रीत्या समर्थितं ? शून्यवाको वा
कया रीत्या निराकृतः ? १०

SANSKRIT (A).

FIFTH PAPER.

FIRST HALF.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

Six questions only to be attempted.

1. 'यद्यपि शास्त्रप्रमाणकं ब्रह्म तथापि प्रतिपत्तिविधिविषयतयैव शास्त्रेण ब्रह्म समर्प्यते यथा यूपाद्वननीयादीन्यलौकिकान्यपि विधि-
शेषतया शास्त्रेण समर्प्यन्ते' ।

Develop this Pūrvapakṣa, and show how it is refuted by Śaṅkara.

2. The Brahma sūtras maintain that the objections raised by the Sāṅkhya against the Vedānta doctrine apply to his theory also. Explain this in detail.

3. 'तदनगत्वसारम्भशब्दादिभ्यः' ।

Expond, on the basis of this sūtra, the Vedāntic view of causation. Quote apposite scriptural texts.

4. Give an account of the theory of the Bauddha Vijnānavādin and redargue it from the Vedāntic point of view. The Vedāntins have by certain antagonists been called 'Cryptobauddhas'; is there any truth in this reproach?

5. Reproduce the substance, and discuss the validity, of the criticism applied by Shankara to the doctrine of the Bhāgavatas.

6. Show to what extent the Sāṅkhya and the Vedāntic view of the nature of the ātman are in agreement, and in what points they diverge.

7. Sketch in outline the Sāṅkhya doctrine of the pramāṇas.

8. Give a detailed account of the Sāṅkhya theory of the nature and function of the antah-karṇa.

9. Translate into English :—

अथादृष्टमाद्यस्य कर्मणो निमित्तमित्युच्येत । तत्पुनरात्मसमवायि
वा आदणुसमवायि वा । उभयथापि नादृष्टनिमित्तमणुषु कर्मावकल्येत,
अदृष्टाचेतनत्वात् । न ह्यचेतनं चेतनेनानधिष्ठितं स्वतन्तुं प्रवर्तते
प्रवर्तयति वेति सांख्यपरीक्षायांमभिहितम् । आत्मनश्चानुत्पन्नचैतन्यस्य
तस्यामवस्थायामचेतनत्वात् । आत्मसमवायित्वाभ्युपगमाच्च नादृष्टमणुषु
कर्मणो निमित्तं आदिसंबन्धात् । अदृष्टवता पुरुषेणास्त्ययूनां संबन्ध
इति चेत् संबन्धसातत्यात् प्रवृत्तिसातत्यप्रसङ्गे नियामकान्तराभावात् ।
तदेवं नियतस्य कस्यचित्कर्मनिमित्तस्याभावाद्वाग्नाष्ट्याद्यं कर्म आत्कर्मा-
भावात् तद्विबन्धनः संयोगो न स्यात् संयोगाभावाच्च तद्विबन्धनं द्वय-
कादिकार्यजातं न स्यात् । संयोगश्चायोरवशन्तरेण सर्वात्मना वा
आदेकदेशेन वा । सर्वात्मना चेदुपचयानुपपत्तिरेणुमात्रत्वप्रसङ्गे दृष्टविप-
र्ययप्रसङ्गश्च, प्रदेशवतो द्रव्यस्य प्रदेशवता द्रव्यान्तरेण संयोगस्य दृष्ट-
त्वात् । एकदेशेन चेत् सावयवत्वप्रसङ्गः । परमायूनां कल्पिताः प्रदेशाः
स्युरिति चेत् कल्पितानामवस्तुत्वादवस्तु एव संयोग इति वस्तुनः
कार्यस्यासमवायिकारणं न स्यात् । असति चासमवायिकारणे द्वयका-
दिकार्यद्वयं नोत्पद्येत ।

FIFTH PAPER.

SECOND HALF.

Examiner—MAHAMAHOPADHYAY CHANDRAKANTA TARKA-
LANKARA.

॥ म पत्रं । न्यायसूत्रवृत्त्योः प्रश्नाः ।

पञ्चानां प्रश्नानामुत्तराणि शोपपत्तिकं लेख्यानि ।

१ । वृत्तिकारमते अर्थस्य किं लक्षणं ? तल्लक्षणघटकपदानां का
व्यावृत्तयः ?

2. Translate into Sanskrit—

5

[illegible]

ሃገራችሁ ለሕዝብ ጤናማ እና ለሀገር ጥቅም

3. Translate into English, and briefly remark on the historical importance of this document, and on some of its more difficult words. 15

ኃይለማርያም ሥላሴ ሥራ ለገባችሁ

ፊት ምዕራብ ዓለም አቀፍ የኢንተርኔት ትምህርት

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40742

SANSKRIT (A).

SIXTH PAPER.

ESSAY.

Write essays on ONE subject from group A, and ONE subject from group B.

A.

Examiner—BABU' NRISINHACHANDRA MUKERJEE, VIDYARATNA,
M.A., B.L., F.R.G.S.

1. Life and society in the Vedic age as represented in the hymns.
2. God Yama and the doctrine of a future life. •

B.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

3. A comparative estimate of the excellences of Kālidāsa and the author of *Mṛichchhākatikā* as poets and dramatists.
4. A Survey of Vedāntic thought in its successive stages—Vedic hymns, Upanishads, Bhāgavad Gītā, Brahma Sūtras, Shankara.

SANSKRIT (D).

- FIRST PAPER.

FIRST HALF.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

SIX questions only to be taken up.

The figures in the margin indicate full marks.

1. Translate into English, with explanations where necessary :—

ननु ज्ञानं नाम मानसी क्रिया, न, वैलक्षण्यात् । क्रिया हि नाम सा यत्र वस्तुस्वरूपनिरपेक्षैव चोद्यते पुरुषचित्तव्यापाराधीना च । यथा 'यस्यै देवतायै हविर्गृहीतं स्यात् तां ध्यायेद् वषट् करिष्यति' 'संध्यां मनसा ध्यायेत्' इति चैवमादिषु । ध्यानं चिन्तनं यद्यपि मानसं तथापि पुरुषेण कर्तुमकर्तुमन्यथा वा कर्तुं शक्यं पुरुषतन्त्रत्वात् । ज्ञानं तु प्रमाणाजन्यं प्रमाणं च यथाभूतवस्तुविषयं, अतो ज्ञानं कर्तुमकर्तुमन्यथा वा कर्तुमशक्यं केवलं वस्तुतन्त्रमेव तन्न चोदनातन्त्रं नापि पुरुषतन्त्रं तस्मान्मानसत्वेऽपि ज्ञानस्य महद् वैलक्षण्यं । यथा च पुरुषो वाच गीतमाग्निर्योषा वाच गीतमाग्निः इत्यत्र योषित्पुरुषयोर्गग्निबुद्धिर्मानसी भवति केवलचोदनाजन्यत्वात् क्रियेव सा पुरुषतन्त्रा च या तु प्रसिद्धेऽप्रावृत्तिबुद्धिः न सा चोदनातन्त्रा नापि पुरुषतन्त्रा किं तर्हि प्रत्यक्षविषयवस्तुतन्त्रैवेति ज्ञानमेव तन्न क्रिया । एवं सर्वप्रमाणविषयवस्तुषु वेदितव्यम् ।

2. 'तस्मात् प्रतिपत्तिविधिविषयतयैव शास्त्रप्रमाणकं ब्रह्माभ्युपगन्त्यमिति' ।

How is this pūrvapakṣa met by the Vedāntin ?

3. Explain the anyathā-khyāti and the akhyāti views ; and contrast with these views the Vedāntic theory.

4. Quote and discuss those scriptural texts which the Sāṅkhyas claim as authorizing their own philosophical tenets.

5. State the theory of the *sphoṭa* and show on what grounds it is controverted by the Vedāntin.

6. Fully comment on any two of the following Sūtras :—

अन्तस्तदुभौपदेशात् ।

सर्वसाधनमुमानं सादिति ।

भूमा संप्रसादादध्युपदेशात् ।

वाक्यान्वयात् ।

सर्वत्र प्रसिद्धोपदेशात् ।

7. Give a summary account of the topics treated of in the first Adhyāya of the Brahma Sūtras.

8. State what you know as to the different interpretations put upon the Brahma Sūtras by different philosophical schools, and discuss the relative validity of those interpretations in the light of the teaching of the Upanishads.

FIRST PAPER.

SECOND HALF.

Examiner—MAHAMAHOPADHYAY CHANDRAKANTA TARKALANKARA.

वेदान्तदर्शनद्वितीयाध्यायस्य प्रथमद्वितीयपादयोः प्रश्नाः ।

पञ्चानां प्रश्नानामुत्तराणि लेख्यानि ।

१ । अतः सम्प्रतिपन्नार्थैकदेशत्वादष्टकादिस्मृतित्वत् योगस्मृतिरप्यनपवदनीया भविष्यतीति इयमप्यधिकाशङ्काऽतिदेशेन निवर्तते । अर्थैकदेशसम्प्रतिपत्तावप्यर्थैकदेशविप्रतिपत्तिः पूर्वोक्ताया दर्शनात् ।

विशदीकृत्य व्याख्यायतामयं सन्दर्भः । अत इति कुतः ? कीदृशोऽर्थैकदेशः कया रीत्या संप्रतिपन्नः ? संप्रतिपन्न इत्यस्य कोऽर्थः ? अष्टकादिस्मृतित्वदिति दृष्टान्तो विशदीकृत्य बोधनीयः । अधिकाशङ्केति कस्मादधिका ? अतिदेशेनेति कीदृशेन ? अर्थैकदेशविप्रतिपत्तिः कीदृशी ? कुत्र वोक्ता ?

१०

२ । एकत्वेकान्ताभ्युपगमे कानि दूषणान्युद्भावितानि ? कानि तेषामुत्तराणि ?

१०

३ । अप्रतीतो तद्वत् प्रसङ्गादसमञ्जसमिति सूक्ष्म कोऽर्थः ? कान्यसामञ्जस्यानि भाष्यकृता वर्णितानि ? कानि तेषां निराकरणांनि ? पक्षान्तरे तान्यसामञ्जस्यानि भवन्ति न वा ?

१०

४ । विज्ञानं स्वयमेवानुभूयते अन्येन वा ? स्वयं चेत्, कथं न स्वात्मनि क्रियाविरोधः ? अन्येन चेत् कथं नानवस्था ? ब्रह्मवादिनोऽप्ययं दोषो भवति न वा ? भवति चेत् किं तस्योत्तरं ? न भवति चेत्, कथं न भवति ?

१०

५ । विवचनमते कति पदार्थाः के च ते ? कानि तेषां स्व-
पाणि ?

१०

६ । कानि सांख्यानं समेन्द्रियाणि ? गुणानां सर्वदा वैषम्य-
भजनाङ्गीकारे को दोषः ? किं नाम वैषम्यं किं वा साम्यं ?

१०

७ । आश्रयस्थाननिरूप्यत्वं विशदीकृत्य बोध-
नीयं । आश्रयस्थाननिरूप्यत्वे का कति ? कस्यायमाश्रयो नाम ?

१०

SANSKRIT (D).

SECOND PAPER.

FIRST HALF.

Examiner—MAHAMAHOPADHYAY CHANDRAKANTA TARKALAN-
KARA.

पञ्चानां प्रश्नानामुत्तराणि लेख्यानि ।

१ । पृथिव्यधिकाररूपशब्दान्तरेभ्य इति सूत्रं भाष्यकारप्रदर्शितो-
पपत्तिवर्णनपूर्वकं विशदीकृत्य व्याख्यायतां । किं नाम शब्दान्तरं ?

१०

२ । एकस्यैव देवदत्तस्य कार्यभेदेन याजकपाठकादिव्यपदेशभेद-
वत् एकस्य प्राणस्य वृत्तिभेदेन प्राणापानादिव्यपदेशभेदवच्च वागादि-
व्यपदेशभेदस्यापि सम्भवात् वागादीनां प्राणभिन्नत्वं कथं समर्थनीयं ?

१०

३ । सांख्यानं काणादानाञ्च मते कर्मफलसंबन्धस्य व्यतिकरः
कया रीत्या आपादितः ? ज्ञेयान्तिमते कथं स न भवति ? कस्यायं
व्यतिकरो नाम ?

१०

४ । समानजातीयमनेकञ्च द्रव्यं कार्यद्रव्यस्य कारणमिति कस्य
मतं ? का तत्र युक्तिः ? कया वा रीत्या तन्मतं निराकृतं ?

१०

५ । अयमात्मा ब्रह्म विज्ञानमय इत्यत्र मयटो विकारार्थत्वे
आत्मन उत्पत्तिः प्राप्नोति । प्राचुर्यार्थत्वे आनन्दमयाधिकारलोक्तयुक्ता
कियान् जडभावः प्राप्नोति । तदिदमात्मनोविज्ञानमयत्वं कथमुपपा-
दनीयं ?

१०

६ । परात्तु तच्छ्रुतेरित्यनेनेश्वरप्रारतस्य जीवस्य कर्तृत्वमुक्तं ।
एवञ्च पापमनुतिष्ठतो जीवस्य कथमपराधः ?

१०

७। कति प्राणविषयाः संख्याविप्रतिपत्तयः काश्च ताः ? कस्तत्र सिद्धान्तः ? किं तत्र कारणं ?

१०

SECOND PAPER.

SECOND HALF.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.SC.

Six questions only to be taken up.

1. Give, in connection with the sūtra सन्ध्ये वहिराह हि, an account of the Vedāntic theory of the state of dream. Comment on the importance of the term माया in मायामात्रं तु कार्त्तव्यमानभिषक्तिरूपत्वान् ।

2. Give the substance of the *pūrvapakṣā* as well as the *siddhānta* with regard to the Scriptural text अथात आदेशो नेति नेति, as commented upon by Shankara under the sūtra प्रकृतैवावच्छं हि प्रतिप्रेषति ततो ब्रवीति च श्रुयः ।

3. Elucidate the distinction between ज्ञान and उपासना. What is understood by गुणोपसंहार with regard to upasānās, and on what principles is such upasamhāra determined to be legitimate ?

4. State the doubts to which so-called प्रतीकोपासना, as e.g. मनो ब्रह्मेत्युपासीत, gives rise, and show how Shankara disposes of those doubts.

5. Give contrasted accounts of the fate, after death, of him who has attained to higher knowledge, and him who possesses lower knowledge only, quoting apposite Scriptural texts.

6. State the different views entertained by Jaimini, Auḍulomi, and Bādarāyaṇa, as to the condition of the released soul. Quote Upanishad passages bearing upon this question.

7. Translate into English either (a) or (b), adding explanatory remarks wherever they seem called for.

(a) येषां पुनर्निपुणमतीनां नाज्ञानसंशयविपर्ययलक्षणः पदार्थविषयः प्रतिबन्धोऽस्ति ते शक्नुवन्ति सकृदुक्तमेष तत्त्वमसि वाकार्यमनुभूविशु-
मिति तां प्रति आदृत्यानर्थक्यमिदमेव सकृदुक्तमेव आत्मप्रतिपत्तिर-
विद्यां निवर्तयति इति नात्र कश्चिदपि क्रमोऽभ्युपगम्यते । सत्यमेवं
युज्येत यदि कश्चिद्वैवं प्रतिपत्तिर्भवेत् बलवती आत्मनो दुःखित्वादि-
प्रतिपत्तिः, अतो न दुःखित्वाद्यभावं कश्चित् प्रतिपद्यते इति चेत् ।
न वेदाद्यभिमानवत् दुःखित्वाद्यभिमानश्च मिथ्याभिमानत्वोपपत्तेः ।
प्रत्यक्षं हि वेदे द्विद्यमाने दृश्यमाने चाऽहं द्विद्यो दृश्ये इति च मिथ्या-

भिमानी दृष्टः तथा वाद्यतरेष्वपि पुत्रमित्रादिषु संतप्यमानेषु अहमेव सन्त्ये इत्यधारोपो दृष्टः, तथा दुःखित्वाद्यभिमानीऽपि स्यात् वेदादि-
वा एव चैतन्याद्वहिरुपलभ्यमानत्वात् दुःखित्वादीनां सुषुप्तादिषु चाननु-
वृत्तेः, चैतन्यस्य तु सुषुप्तेऽप्यनुवृत्तिस्मान्नन्ति 'यद्वै तन्न पश्यति पश्यन् वै
तन्न पश्यति' इत्यादिना । तस्मात् सर्वदुःखविमुक्तैकचैतन्यात्मकोऽहमि-
त्येष आत्मानुभवः ।

(b) यदेव विद्यायेति हि सत्यमेतत् त्रिव्यासंयुक्तं कर्माग्निहोत्रादिकं
विद्याविहीनात् कर्मणोऽग्निहोत्रादेर्विशिष्टं विद्यावानिव ब्राह्मणो विद्या-
विहीनाद् ब्राह्मणात्, तथापि नात्यन्तमनपेक्षं विश्वारहितं कर्माग्निहो-
त्रादिकं, कस्मात् तमेतमात्मानं यज्ञेन विविदिषन्ति इत्यत्राविशेषेणा-
ग्निहोत्रादेर्विद्यहेतुत्वेन श्रुतत्वात् । ननु विद्यासंयुक्तस्याग्निहोत्रादेर्वि-
द्याविहीनाद् विशिष्टत्वावगमात् विद्याविहीनमग्निहोत्राद्यात्मविद्या
हेतुत्वेनानपेक्षमेवेति युक्तम् । नेतदेवं, त्रिव्यासहायस्याग्निहोत्रादेर्विद्या-
निमित्तेन सामर्थ्यातिशयेन योगादात्मज्ञानं प्रति कश्चित्कारणत्वाति-
शयो भविष्यति न तथा विद्याविहीनस्येति युक्तं कल्पयितुं, न तु 'यज्ञेन
विविदिषन्ति' इत्यविशेषेणात्मज्ञानाङ्गत्वेन श्रुतस्याग्निहोत्रादेरनङ्गत्वं
शक्यमभ्युपगन्तुम् । तथा हि श्रुतिः 'यदेव विद्याया करोति श्रद्धयोपनि-
षदा तदेव वीर्यवत्तरं भवति' इति विद्यासंयुक्तस्य कर्मणोऽग्निहोत्रा-
देर्वीर्यवत्तरत्वाभिधानेन स्वकार्यं प्रति कंचिदतिशयं ब्रुवाणा विद्यावि-
हीनस्य तस्यैव तत्प्रयोजनं प्रति वीर्यवत्त्वं दर्शयति ॥

SANSKRIT (D).

THIRD PAPER.

FIRST HALF.

Examiner—PANDIT RAMNATH TARKARATNA.

Candidates shall give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

(प्रश्नानां प्रथमपञ्चकस्य द्वितीयपञ्चकस्य वा उत्तराणि संस्कृत-
भाषया देयानि ।)

१ । तदसत्, ज्ञानकर्मनिष्ठयोर्विभागवचनाद्बुद्धिद्वयाश्रययोर-
ग्रोक्ष्यानित्यादिना ग्रन्थेन भगवता यावत् स्वधर्ममपि चावेक्ष्य इत्येतद-
स्तेन ग्रन्थेन — ।

(क) तदसदित्यादिना सन्दर्भस्य कस्य मतं सूचयति ? १०

(ख) किं बुद्धेरलक्षणम् ? सा खलु कतिविधा ? बुद्धिद्वयञ्चात्र
कादृशम् ? ८

२ । आत्मदर्शने किं नाम करणम् ? कीदृशञ्च तत् ? ५

३ । को नाम सङ्भावविक्षाराः ? ५

४ । त्रैगुण्यविषया वेदा निस्त्रैगुण्यो भवार्जुन ।

निर्द्वन्द्वो नित्यसत्त्वस्थो निर्योगक्षेम आत्मवान् ॥

यावानर्थं उदपाने सत्ततः संप्रतोदको ।

तावान् सत्त्वैषु वेदेषु ब्राह्मणस्य विजानतः ॥

(क) श्लोकयोरनयोर्व्याख्यां विधाय प्रत्येकं तात्पर्यं कथय ? ६

(ख) यावानर्थं इत्यादि सन्दर्भस्य भाष्यकारकृता व्याख्या समीचीना
न वा ? असमीचीना चेत्, विशदीकृत्य प्रदर्शय ? ८

५ । न हि कश्चित् क्षणमपि जातु तिष्ठत्यकर्मकृत् । ८

कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥

प्रकृतेर्गुणसंभूताः सज्जन्ते गुणकर्मसु ।

तानकृत्स्नविदो मन्दान् कृत्स्नविद्ग विद्यालयेत् ॥

प्रकृतेः क्रियमाणानि गुणैः कर्माणि सर्वशः ।

अहङ्कारविभूतात्मा कर्त्ताहमिति मन्यते ॥

सदृशं चेष्टते स्वस्याः प्रकृतेर्ज्ञानवानपि ।

प्रकृतिं यान्ति भूतानि निग्रहः किं करिष्यति ॥

श्लोकोच्चेतेषु सर्वत्र प्रकृतिशब्दानां किमभिन्नार्थत्वमुत भिन्नार्थत्वमपि ? भिन्नार्थवाचित्वमपि चेत् तत्र तत्र तदर्थं निर्दिश्य ब्रूहि ?

१ । देहभेदानुत्त्पत्त्या बहुवचनं, नात्मभेदाभिप्रायेण ।

१०

आत्मभेदाभ्युपगमे को नाम दोष इति आत्मभेदानभ्युपगमे च कस्तावद्गुण इत्यपि युक्तिप्रमाणाभ्यां निरूपय ?

२ । अजोऽपि सन्नव्यायात्मा भूतानामीश्वरोऽपि सन् ।

प्रकृतिं स्वामधिष्ठाय सम्भवाम्यात्ममायया ॥

(क) विशेषणानां प्रत्येकं सार्थक्यप्रदर्शनपूर्वकं व्याख्यायतामसौ ?

६

(ख) कति नाम प्रकृतेर्भेदाः ?

४

(ग) मायाप्रकृत्येवभिन्नत्वं भिन्नत्वं वा ? तत्र तत्र युक्तिरपि प्रदर्शनीया । मायायाः प्रकृतेश्च किं लक्षणम् ।

८

३ । सं पूर्वस्तु न्यासशब्दोऽत्र न्यागार्थो न निक्षेपार्थः । तस्माद्वीता शास्त्रे आत्मज्ञानवतः संन्यास एवाधिकारो न कर्माणि इति तत्र तत्र उपरिष्ठादात्मज्ञानप्रकरणे दर्शयिष्यामः ।

१२

इदं खलु कस्मिन्नध्याये कोन सन्दर्भेण दर्शितमिति प्रदर्शय, अथवा भाष्यकारस्य रीत्या स्वयमेव त्रिरचय्य प्रकाशय ।

४ । को नाम विपरिणामः ?

२

५ । मात्रास्पर्शास्तु कौन्तेय शीतान्णामुत्तदुःखदाः ।

आगमापायिनोऽनित्यास्तांस्तितिक्षस्व भारत ॥

वेदाविनाशिनं नित्यं य एनमजमव्ययम् ।

कथं स पुरुषः पार्थ कं घातयति हन्ति कम् ॥

(क) व्याख्येयो खल्वेतो सन्दर्भौ ?

४

(ख) भगवत उपदेशादज्जुनस्य कौतूशी बुद्धिरभूदिति बोधय ?

४

THIRD PAPER.

SECOND HALF.

Examiner—PANDIT PRAMATHANATH TARKABHUSHAN.

The figures in the margin indicate full marks.

1. निम्नोद्धृतयोः प्रश्नयोरेकतरस्योत्तरं संस्कृतभाषया लिख । 15

(a) “ज्ञेयं यत्तत्प्रवक्ष्यामि यज्ज्ञात्वाऽश्नुतमश्नुते ।

अनादिमत्परं ब्रह्म न सत्तद्भाषदुच्यते” ॥

भाष्यानुसारेण व्याख्यायतामयं श्लोकः सदसतोरेकतरनिषेधजन्य-
तरस्यावश्यमभ्युपगन्तव्यतापातादत्र तु ज्ञेयस्य तदनुभयरूपत्वोक्तिरसङ्गतं-
वाभाति तत्कथमत्र सङ्गतिर्विधेया ? रेखाङ्कितांशस्य व्याख्यानावसरे
भाष्यकृता यन्मतान्तरमुपन्यस्तं कौदृशं तत् ? का च तत्समर्थनाय युक्ति-
रुपन्यस्ता ? कया वा युक्ता तत्खण्डनं कृतम् ?

(b) “सिद्धिं प्राप्नो यथा ब्रह्म तथाऽऽप्नोति निबोधमे ।

समासेनेव कौन्तेय निष्ठा ज्ञानस्य या परा” ॥

भाष्यकृदुक्तदिशा अस्य श्लोकस्य व्याख्यानं कार्यं कौदृशीयं ज्ञानस्य
परा निष्ठा ? सिद्धिपदेनाऽत्र कौदृशीसिद्धिर्ग्राह्या ? यथा तथेति पदयो-
रर्थौ प्रदर्शनीयौ । यथेतिपदं कुत्रान्वेति ? ज्ञानं चात्र किमाकारं किं
प्रमाणकं चेति भाष्यकृदाशयानुसारेण निरूप्यतम् ।

2. निम्नलिखितानां चतुर्ष्वीं प्रश्नानां द्वयोः कयोश्चिदुत्तरं संस्कृत- 20
भाषया प्रतिपादय ।

(a) ज्ञानकर्मणोः समुच्चयेन मोक्षं प्रति कारणत्वं अद्वैतवादिभ्यो न
रोचते रोचते च पुनर्द्वैतवादिभ्यः तदनयोरुच्यरुच्योः कारणे प्रतिपाद-
नीये ।

(b) गीतायां द्वैतपरत्वेन प्रतिभासमानानां श्लोकानां त्रीन् उद्धृत्य
तेषां भाष्योक्तदिशा अद्वैतपरत्वं व्यवस्थाप्यताम् ।

(c) बुद्धि - सत्त्वाद्य - प्रवृत्ति-स्वभाव-अनुबन्ध-गुण-अधिष्ठान-विसर्ग
इत्येतेषां शब्दानां गीतायां पठितानां भाष्यसम्भता अर्था यथाक्रमं
प्रदर्शनीयाः ।

(d) समुपदर्शयन्तां तापुक्तयो याभिर्भाष्यकार आरम्भवादपरिणामवादी
खण्डयित्वा विवर्तवादं गीताभाष्ये व्यवस्थापितवान् ।

3. निम्नोद्धृतयोर्भाष्यांशयोः कश्चनेकोऽंशः संक्षेपेणोपक्रमं प्रदर्शय 15
व्याख्यायतां सरलसंस्कृतभाषया ।

(a) “किञ्चान्यन्नित्यस्य काम्यस्य चाग्निहोत्रादिरनुष्ठानायासदुःखस्य तुल्यत्वाद्नित्यानुष्ठानायासदुःखमेव पूर्वकृतदुरितस्य फलं न तु काम्यानुष्ठानायासदुःखमिति विशेषो नास्तीति तदपि पूर्वकृतदुरितफलं प्रसज्येत । तथाच सति नित्यानां फलान्नवद्यात्तद्विधानान्यथानुपपत्तेश्च नित्यानुष्ठानायासदुःखं पूर्वकृतदुरितफलमित्यर्थापत्तिकस्यनानुपपन्ना” ।

(b) “यदि ब्रूयाच्छीतोऽग्निरप्रकाशो वेति तथाप्यर्थान्तरं श्रुतेर्विवक्षितं कल्प्यं, प्रमाणान्यथानुपपत्तेर्न तु प्रमाणान्तरविरुद्धं स्ववचनविरुद्धं वा । कर्मणो मिथ्याप्रत्ययवत्कर्तृकत्वात् कर्तुरभावे श्रुतेरप्रामाण्यमिति चेन्न, ब्रह्मविद्यायामर्थवस्त्वोपपत्तेः । कर्मविद्याश्रुतिवद् ब्रह्मविद्याश्रुतेरप्रामाण्यप्रसङ्ग इति चेन्न, बाधकप्रत्ययानुपपत्तेः” ।

SANSKRIT (D).

FOURTH PAPER.

FIRST HALF.

Examiner—PANDIT THAKUR PRASAD VYAKARANACHARYYA.

Unless otherwise specified the answers should be in Sanskrit.

The figures in the margin indicate full marks.

Answer any THREE out of the following six.

परिभषा and सारः

1. (i) स्मृतिसाधारणं तद्व्यादृतं च प्रमाणसामान्यलक्षणं लक्षणघटक- 10
पदकृत्यप्रदर्शनपूर्वकं लेख्यम्, धारावाहिकज्ञानस्य सिद्धान्ते प्रमाणत्व-
मिष्टं न वा ? कौटुशलक्षणे च तत्र शङ्कोत्यिति ? नीरपस्यापि काल-
खेन्द्रियवेद्यतास्वीकारे साधकबाधकप्रमाणानि खोपपत्तिकं लेख्यानि ।

(ii) मनस इन्द्रियत्वानिन्द्रियत्वयोः कतरो बलीयान् ? तस्यानिन्द्रि- 10
यत्वे “इन्द्रियाणां मनश्चास्मि” इति गीता वाक्यस्य कथं सङ्गतः ?

तस्यानिन्द्रियत्वसाधने कथं वा ग्रन्थकृतः पक्षपातः ? इन्द्रियजन्यज्ञानस्य विद्वान्ते प्रत्यक्षत्वमस्ति न वा ? नो चेत्कथम् ?

(iii) “अतएव पर्वतीं बन्दिमानिति ज्ञानमपि बन्धंशे परोक्षम् पर्वतांशे चापरोक्षम्” इत्यादि सन्दर्भो वैशद्येन व्याख्यायताम् । किं सन्निकृष्ट-पक्षकानुमितावेव पक्षांशेऽपरोक्षविषयता ? आहोस्विदसन्निकृष्टपक्षका-नुमितावपि ?

(iv) परिणामविवर्तवादयोः को भेदः ? जगतोऽविद्यापरिणामस्वीकारे च कथं तस्यात्मपरिणामता ? तथात्वे च कथं तस्य ब्रह्मविवर्तताऽपि ? किञ्च रजतादिषमस्तजगतो ब्रह्मविवर्तताऽङ्गीकारे पुरोवर्ती दन्तत्वेन कथं व्यवहारः ?

(v) कौटुशाकाङ्गालक्षणास्वीकारे वैश्वदेवयाने न वाजिनाकाङ्क्षेति बलाबलाधिकरणतात्पर्यम् ? किं स्वरूपं च बलाबलाधिकरणम् । तदर्थं सोदाहरणः प्रदर्शनीयः ।

(vi) शाङ्करमते निखिलप्रपञ्चस्यात्मरूपताऽध्यारोपापवादरौत्याऽनुभव-प्रमा युक्तिभिश्च विशदीकृत्य प्रदर्शनीया ।

2. Answer either of the following two :—

(i) औवन्मुक्तस्य किं लक्षणम् ? विवेकमुक्ताश्चास्य को भेदः ? उभय-विधमुक्तिप्राप्तौ च को हेतुः ?

(ii) लक्षणास्वरूपवर्णनपुरस्सरं महावाक्यार्थो निरूपणीयः ।

3. Explain any four out of the eight questions, and supply their answers.

(i) नन्वेवमेकत्र परोक्षत्वापरोक्षत्वयोरभ्युपगमे तयोर्जातित्वं न स्यात् ?

(ii) ननु घटादेः कथमन्तःकरणाऽवच्छिन्नं चैतन्याभेदः ? अहमिदं पश्चामीति भेदाऽनुभव विरोधात् ?

(iii) वाक्यजन्यज्ञानस्य संघर्षाऽवगाहित्वेन कथं निर्बिकल्पकत्वम् ।

(iv) नन्विदं वृत्तेः रजताकारवृत्तेश्च प्रत्येकमेकैकविषयत्वे गुरुमत-वद्विशिष्टज्ञानानभ्युपगमे कुतो असंविद्धिः ? (गुरुमतं प्रदर्शनीयम्) ।

(v) व्याप्तिज्ञानत्वेन व्याप्तिज्ञानजन्या केयमनुमितिः ? ज्ञानपदव्यावृत्तिः का ? व्याप्तिस्वरूपं (लक्षणं) च किम् ?

(vi) वेदान्तिकैर्ब्रह्मणि निखिलजगत्कारणत्वेन प्रतिपाद्यमाने सप्रपञ्चं ब्रह्म स्यात् ?

(vii) ननु केयमनुपसृजिर्नाम ? (Explain अनुपसृजि) ।

(viii) कीदृशब्रह्मज्ञानस्य मूलाज्ञाननिवर्तकत्वः ? किं वृत्तिरूपस्योत-
वृत्त्यादृष्टचैतन्यप्रकाशस्य ? (परिभाषारौत्या सिद्धान्तलेखाऽनुसारेण वा
वाख्यायताम्) ।

FOURTH PAPER.

SECOND HALF.

Examiner—PANDIT GANGANATH JHA, M.A.

SIDDHĀNTALESHA.

Answers should be worded in Sanskrit, unless otherwise specified.

The figures in the margin indicate full marks.

1. The doctrine of 'Māyā'—its origin and historical develop- 10
ment.
2. What distinction does the Vedāntin draw between 'Jīva' and 5
'Sākaśa' ?
3. Explain the Vedānta view of 'Pratyakṣa,' fully bringing out 5
the function of the 'vṛtti.'
4. Expound in brief, in English, the दृष्टिद्विवाद and the 10
सिद्धिद्विवाद .
5. In what way does the Vedāntin reconcile his position with 5
such Smṛiti texts as कर्मणैव हि संसिद्धिमाप्सिता जनकादयः ?
6. Explain any three of the following "Pūrvapakṣa" passages and 15
supply their "Uttarapakṣa":—

- (i) ननु न श्रुतिश्रुक्तिभिः प्रपञ्चस्य मिथ्यात्वमपत्याययितुं शक्यते ॥
- (ii) ननु तथाऽप्युपजीव्यत्वेन प्रत्यक्षस्यैव प्राबल्यमुद्वारम् ॥
- (iii) ब्रह्मसाक्षात्कारे किङ्करणम् ॥
- iv सन्नासस्य किङ्कारा विद्योपयोगः ॥
- (v) अथ विद्योदये सत्युपाधिविलयादपेतजीवभावस्य किमौश्वरभावा-
पत्तिस्तु शुद्धचैतन्यमात्ररूपेणावस्थानम् ।
- (vi) नन्वनवच्छिन्नानन्दः प्रत्यग्रूपतया नित्यमेव प्राप्तः ।

SANSKRIT (D).

FIFTH PAPER.

FIRST HALF.

Examiner—MAHAMAHOPADHYAY KAMAKHYANATH TARKABAGIS.

The figures in the margin indicate full marks.

१ । कर्मकाण्डे केषामधिकारित्वं, केषां वा ज्ञानकाण्डे । उप-
निषच्छास्त्रस्य को विषयः, किं प्रयोजनं, कस्य सम्बन्धः । विषयादीनां
मध्ये प्रयोजनस्य प्राधान्यमस्ति न वा । केन सन्दर्भेण प्रयोजनमुपदर्शितं
भाष्यकृता । ब्रह्मविद्याया उपनिषद्ग्रन्थस्य च कया रीत्या उपनिष-
च्छब्दवाच्यत्वं, उपनिषदिति नाम रुढ़ं वा यौगिकं, रुढ़ञ्चेत् किं
रुढ़ितावच्छेदकं, यौगिकञ्चेत् को योगार्थः ।

२ । प्राणादिपञ्चवायूनां किं लक्षणं, किञ्च स्थानं । 'हृदयसम्ब-
न्धिनी या वायुवृत्तिः तत्र प्राणशब्दप्रवृत्तौ किं निमित्तं, निमित्तबोधक-
वाक्यस्य को निष्कर्षार्थः । "वीर्यवत्कर्महेतुश्च उदान उत्कर्षोर्ध्वगम-
नादिहेतुः" इति भाष्यसन्दर्भे किं वीर्यवत् कर्म, कोऽयमुत्कर्षः, आदि-
पदेन कस्य परिग्रहः ।

३ । प्राणव्रतमभयत्वेन धारणीयमिति येन सन्दर्भेण निर्णीतं, स
सन्दर्भ उद्भूतः विशदीकरणीयः ।

४ । "यदिदं सर्वं सृष्टुनासं सर्वं सृष्टुनाभिपन्नं केन यजमानोः
त्योराग्निमिति मुच्यते" । इत्युपनिषद्भागस्य किं व्याख्यानं । उक्तोप-
निषद्भागघटकीधूते केनेति प्रश्ने कौटुगाक्षेपं कृत्वा कया रीत्या स
परिहृतो भाष्यकारेण । "तस्यैव परौक्षाविषयोऽयमिति तद्वतदर्शनविशे-
षार्थोऽयं विस्तार आरभ्यते" । इति भाष्यसन्दर्भे तत्पदस्य दर्शनपदस्य च
कोऽर्थः । "विशेषार्थः" इत्यत्र को विशेषः ।

५ । शोक-माहयोज्जगसुत्प्लोरसनायादीनाञ्च किमधिकरणकत्वं ।
संसारस्य किं स्वरूपं अत्र तन्निर्वचनस्य किं फलं । तन्निर्वचनप्रकरणे
किं दृष्टान्तद्वयमुक्तं भाष्यकारेण, तादृशदृष्टान्तद्वयस्य किं दाहुरीन्तिकं ।

६ । देहस्य इन्द्रियस्य मनसश्च आत्मत्वे पूर्णपक्षिणां काः साधिका-
युक्तयः । काश्च सिद्धान्तिनां बाधिका युक्तयः । देहस्यात्मत्वे कादाचित्कं
द्रष्टृत्व-श्रोतृत्वाद्युक्तमिति शङ्का स्वभाववादिना कया रीत्या केन

दृष्टान्तेन परिहृता । वेदस्यैव दर्शनादिक्रिया न व्यतिरिक्तस्तेति यदुक्तं
स्वभाववादिना तत् कथं सूचितं भाष्यकारेण । कः सिद्धान्तपक्षः,
तस्मिन् पक्षे कथं सर्वं समञ्जसं भवति ।

FIFTH PAPER.

SECOND HALF.

Examiner—PANDIT GANGANATH JHA, M.A.

CHHANDOGYA UPANIṢAD WITH BHĀṢHYA.

Answers should be worded in Sanskrit, unless otherwise specified.

The figures in the margin indicate full marks.

1. Sum up, in English, the teaching imparted by Āruṇi to Shveta- 10
ketu,—or that imparted by Sanatkumāra to Nārada.

2. Explain the following, discussing the various readings :— 12

(a) तस्य यथा कप्यासम्पुच्छरीकमेवमस्तिथौ । तस्योदिति नाम । स
एव सर्वस्यः पाप्मस्य उदेति ।

(b) सर्वज्ञस्त्विदम्ब्रह्म । तज्जलानिति ज्ञान्त उपासीत ।

(c) आदित्यप्रदस्य रेतसः । उद्वयन्तमसस्परिज्योतिः पश्यन्त उत्तरं
स्यः पश्यन्त उत्तरन्देवन्देवना सूर्यमगन्म ज्योतिरुत्तमः ।

3. कयो धर्मेच्छायाः । What inferences does Shaṅkara draw from 8
this ?

4. विज्ञानाम्यहं यत् प्राणो ब्रह्म । कञ्च तु कञ्च न विज्ञानामीति ।

Explain, according to Shaṅkara, the answer given to this question. 10

5. How far may the Chhāndogya Upaniṣad be regarded as con-
taining the germs of the "Māyāvāda"? Support your answer by
quotations.

SANSKRIT (D).

FIFTH PAPER.

(OPTIONAL PAPER).

INDIAN PALÆOGRAPHY AND EPIGRAPHY.

Examiner—A. VENIS, ESQ., M.A.

The figures in the margin indicate full marks.

1. Transcribe the following inscription in Devanagari, and 35
provide a faithful English version of it :—

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

2 Transcribe in Devanagari the reproductions marked A, B, C 50
and D. You are requested (a) to leave blanks in your transcription
wherever letters may be illegible or doubtful ; (b) to propose readings
in such cases ; (c) to determine the approximate age of the epigraphs
stating all your reasons in every case ; (d) to explain the matter of
each epigraph.

3. Set out fully the conclusions to be drawn from the Mauryan 15
inscriptions as to the existence of different dialects and different
alphabets, and the distribution of each.

SANSKRIT (D).

SIXTH PAPER.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

ESSAY.

'An estimate of the comparative validity of the interpretations put upon the teaching of the Upanishads by Shankaracharya and Ramanujacharya respectively.'

COMPARATIVE GRAMMAR.

N.B.—Only FIVE questions to be taken up.

1. On what grounds does Max Müller controvert the views (a) that language is a conventional production ; and (b) that language is a purely natural growth.
2. What is understood by a dialect ? Explain and exemplify the process of *dialectic regeneration*. 'Hindustani is not the daughter of Sanskrit as we find it in the Vedas, or in the later literature of the Brahmans : it is a branch of the living speech of India, springing from the same stem from which Sanskrit sprang.' Elucidate this statement.
3. State and review the evidence for holding that before their separation the Aryans led the life of agricultural Nomads.
4. Discuss the principles of *sound* etymology. Give instances (1) of the same word taking different forms in the same language ; and (2) of the same word appearing in different forms in different languages.
5. Explain the meaning of, and illustrate by examples, the statement that 'even the most special names are really general terms.'
6. Give an account of the principal ancient Greek theories of Language.
7. Indicate the twofold causes of phonetic change, and illustrate their action by references to Sanskrit, Prakrit and the modern Indian Vernaculars.

SANSKRIT (E).

FIRST PAPER.

RIGVEDA.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

The figures in the margin indicate full marks.

- (a) • इदं श्रेष्ठं ज्योतिषां ज्योतिरागा-
 क्षिप्रः प्रकोतो भूजनिष्ठु विभ्वा ।
 यथा प्रभूता सवितुः सवायं
 सवा राक्षसस्य योनिमारोह ॥

रुद्रहृत्वा रुद्रती श्वेत्यागादा-
 रेणु कृष्णा सदनान्यथाः ।
 समानवन्धुं असुते अनूची
 द्यावा वर्णं चरतं आमिनाने ॥
 समानो अघ्वा स्वस्तीरनन्तस्त-
 मन्यान्वा चरतो देवशिष्टे ।
 न मेयेते न तस्यतुः सुमेको
 नक्तोषासा समनसा विश्वे ॥
 भास्वती नेत्री नृत्तानामचेते
 चित्रा वि तुरो न आवः ।
 प्रार्ण्या जगद् व्यु नो रायो अख्य-
 तुषा अजीगर्भुवनानि विश्वा ॥
 जिह्मस्थे चरितवे मघोन्वा-
 भोगय इष्टये राय उ त्वं ।
 दधं पश्यद्वभ्य उर्विया वि चक्ष
 उषा अजीगर्भुवनानि विश्वा ॥
परायतीनामन्वेति पाथ
प्रथमा शश्वतीनां ।
 व्युच्छन्ती जीवमुदीरयन्त्युषा
 स्रुतं कं चन बोधयन्ती ॥

- (b) प्र ये ह्यमन्ते जनयो न समयो
 वामबुद्धयः सूनवः सुदंशवः ।
 रोदसी हि मरुतश्चक्रिरे वृधे
 मदन्ति क्षीरा विदधेभु घृष्टवयः ॥
 त उक्षिताघो महिमानमाश्रत
 दिवि रुद्राखो अधि चक्रिरे सवः ।
 अर्चन्तो अर्कं जनयन्त इन्द्रिय-
 मधि अियो दधिरे प्रमिमातरः ॥
 गोमातरो यच्छुभयन्ते अग्निभि-
 स्तनूषु शुधा दधिरे विरुजतः ।

बाधन्ते विश्वमभिमातिनमप-
 वर्त्मान्निषामनु रीयते घृतम् ॥
 वि ये आजन्ते सुमखाय ऋष्टिभिः
 प्रक्यावयन्तो अक्युता चिद्विज्ञसा ।
 मनोज्ञो यन्मरुतो रषेष्वा
 वृषव्रतासः पृषतीर्युग्मसु
 प्र यद्रथेषु पृषतीर्युग्मं
 वाजे अर्द्धं मरुतो रंहयन्तः ।
 उतारुषस्य विष्यन्ति धारा-
 शर्मवोदभिर्वृन्दन्ति भूम ॥
 आ वो वहन्तु समयो रघुष्यदो
 रघुपत्नानः प्र जिगात बाहुभिः ।
 वीदता बर्हिंस वः सदस्कृतं
 मादयध्वं मरुतो मध्वो अन्वसः ॥॥

Translate into English extract (a) or (b) ;] with grammatical notes on the words underlined in the extract you translate.

2. Write a Tīkā in Sayana's style on either (a) or (b).

10

(a) यच्चिद्धि ते विशो यथा प्र देव वरुण व्रतं ।

मिनीमसि ह्यविद्यावि ॥

मा नो वधाय हन्तवे जिहीळानस्य रौरघः ।

मा हृणानस्य मन्यवे ॥

वि सुलीकाय ते मनो रथौरध्वं न संदितं ।

गौर्भिर्वरुण वीमहि ॥

परा हि मे विमन्यवः पतन्ति वस्य हृष्टये ।

वयो न वसतीरुप ॥

(b) तत्त हृद्भियं परमं पराचैरधारयन्त कवयः पुरेदं ।

समीदमन्यद्विष्यन्त्यदस्य समी पृथ्यते समनेव सेतुः ॥

अ धारयत्पृथिवीं पप्रथस्य वज्रेण हत्वा निरपः ससर्ज ।

अहङ्गहिमभिनद्रोहिणं व्यहन्त्यसं मघवा शचीभिः ॥

स जातूमर्मा अतृघान श्रीजः पुरो विभिन्दन्नचरद्दिवासीः ।

विह्वान्वज्रिन्वस्यवे वेतिमकार्यं सहो वर्धया ह्युन्नमिन्नु ॥

3. Explain, grammatically or etymologically as may appear required, the words underlined in the following :— 13

त्वां ह त्वदिन्द्राण्यसातो स्वर्माँळवे नर आजा इवन्ते ।
 तव स्वधाव इयमा समर्थ कतिर्वाजिष्यतसाया भूत ॥
 त्वं ह त्वदिन्द्र सप्त युध्यन्पुरो वज्रिन् पुरुकुत्साय दईः ।
 बर्हिर्न यत्सुदासे वृथा वर्गँहो राजन् बरिवः पूरत्रे कः ॥
 त्वं त्वां न इन्द्र देव चित्रामिषमापो न पीपयः परिष्मन् ।
 यया शूर प्रत्यस्वभ्यं यंसि त्वनमूर्जं न विश्वध क्षरधौ ॥
 अकारि त इन्द्र गोतमेभिर्ब्रह्माण्योक्ता नमसा हरिभ्यां ।
 सुपेशं वाजमा भरा नः प्रातर्नक्षू धियावसुर्जगन्मात् ॥

4. (a) Write out the following Rik in Samhitā form, with the proper accents :— 4

त्वम् । अद्य । पारे । रजसः । विऽश्रामनः । स्वधूर्तिः
 श्रोजाः । अवसे । धृषत्ऽमानः ।
 वज्रवे । भूमिं । प्रतिऽमानम् । श्रोजसः । अयः ।
 स्व१रिति स्वः । परिऽभूः । इति ॥

(b) Write out the following Rik in Padapāṭha form, with the proper accents :—

दासपत्नीरहिगोपा अतिवृद्धिरुद्धा आपः पणिनेव गावः ।
 अपां बिलमपिहितं यदासीद्वृत्रं जघन्वाँ अप तद्ववार ॥

5. Discuss the relation of Sāṃhitā and Brāhmaṇa (1) from the historical point of view, and (2) from the systematic point of view of the Indian Schoolman. 13

Or,

Indicate the groups into which the hymns of the first Mandala of the Rik Samhitā naturally divide themselves, and the main features by which these groups are distinguished.

6. Give an account of the respective functions of the several groups of priests officiating at a Soma-sacrifice, giving special details as to the duties of the several Hotṛ-priests. 12

Or,

Describe the āstithya-ishti. What are the characteristic features of all ishtis? Explain the following terms—Anuvākyā, Puro'nuvākyā, Yājyā, Prayāja, Anuyājā.

7. How does the Mīmāṃsaka prove the prāmāṇya of vidhi, and that of ar'havada? 10

8. Discuss the अपौषवेयता of the Veda from the point of view of the पूषेपचिन् as well as the सिद्धान्तिन् 10

9. Explain the following passages :—

10

(a) स्वर्गं वा एतेन लोकमुपप्रयन्ति यत्प्रायणीयस्तत्प्रायणीयस्य प्राय-
णीयत्वम् । प्राणो वै प्रायणीय उदान उदायनीयः समानो होता भवति ।
समानो हि प्राणोदानो प्राणानां ऋत्ये प्राणानां प्रतिज्ञात्ये ।

(b) देवासुरा वा एषु लोकेषु सुमयन्त । ते वा असुरा इमानेव
लोकान् पुरोऽकुर्वन्त यथोक्तीयांसो बलीयांस एव । ते वा असुरस्यीमे-
मामकुर्वन्त रजतामन्तरिक्षं हरिणीं दिवं ते तथेमाँल्लोकान् पुरोऽकुर्वन्त ।
ते देवा अब्रुवन् पुरो वा इमेऽसुरा इमाँल्लोकानक्रतु पुर इमाँल्लोकान्
प्रतिकरवामह इति । तथेति । ते सद एवास्याः प्रत्यकुर्वन्ताग्नीध्रमन्तरि-
क्षाद् धविर्धाने दिवस्ते यामेव प्रथमासुपसदमुपायंस्तथैवेनानस्माँल्लोका-
दनुदन्त यां द्वितीयां तयान्तरिक्षाद् यां तृतीयां तया दिवस्तांस्तथैव
लोकेभ्योऽनुदन्त ।

SANSKRIT (E).

SECOND PAPER.

Examiner—ĀCHĀRYYA SATYA VRATA SĀMAŚRAMĪ.

The figures in the margin indicate full marks.

(संस्कृतभाषया संस्कृताक्षरेष्वप्रश्नोत्तराणि लेख्यानि .)

अथ सामवेदस्य —

१ । “प्र केतुना वृहता याव्यग्निरारोहसी वृषभो रोरवीति ।

दिवस्त्रिदन्तादुपमासुदानडपासुपथ्ये सहिषो ववर्द्ध ॥” — इति,

एष मन्त्रो व्याख्यायताम् । तत्र को नाम वृषभः ? को वा सहिषः ?

किं वा अपासुपथ्यम् ? इति विशेषतो निर्णीयताम्, व्याक्रियताञ्च
उदानट्-पदम्, इह श्रुतस्योपमाशब्दस्यार्थञ्च स-मानमाख्यायताम् ।

१५

२ । “प्र होता जातो महान्नभोविद्गृध्रासीददणं दिवस्ते ।

दधद्योऽधायि सुते वयाँश्च यन्ता वसूनि विधत्ते

तनूपाः ॥” — इति,

सर्विच्छन्दोदेवताविनियोगाख्यानं मन्त्राभिधेयनिर्णयपूर्वकञ्चाज्ञा

याख्यानं सत्यकृ लेख्याताः, ज्ञापयताञ्चानुस्मरणं “५” कथङ्कारमितीति ॥

१५

अथ सामभाष्योपक्रमस्याम् —

३ । यदुद्धृतम् “अतिदेश्यं विनिश्चितं कवतीषु रथन्तरम् । गायत्री-
त्युक्तं गानयुक्ता शब्दार्थो गानमेव वा ॥ इति चिन्ता गानयुक्ता त्वमित्वे-
त्युक्तप्रसिद्धितः । लाघवाद्गतिदेश्यं योग्यत्वाच्चान्तिमो भवेत्” — इति,
तदिदमधिकरणं व्याख्यायोपपाद्यताम् ।

१५

४ । सामनिष्पादकत्वं केषामिति सोदाहरणप्रदर्शनं विव्रियताम् ।

१०

५ । वेदसामगानानामपौरुषेयत्वं मत्वाप्यूहगीतीनां पौरुषेयत्वं
यथा निर्णीतम्, तत् प्रतिपाद्यताम् ।

१०

६ । को नाम पञ्चदशस्तोमः ?

१०

अथाथर्ववेदश्च—

७ । “स संवत्सरमुद्धर्षोऽतिष्ठत् तं देवा अभ्रुवन् ब्राह्म किन्
तिष्ठसीति । सोऽब्रवीदासन्दी मे समरन्त्विति । तस्मै ब्राह्मयासन्दी
समभन् । × × × । तामासन्दी ब्राह्म आरोहत् । तस्य देवजनाः
परिक्रन्दा आसन्सङ्कल्पाः प्रहाय्याः त्रिष्टानि भूतान्युपसदः । ×
× × ॥”—इति,

सूक्तमेतद् व्याख्यायताम् । अप्यत्रत्यानां ब्राह्मः, आसन्दी, ब्रह्मोप-
बर्हणम्, उद्गीथः, अपभ्रयः, यज्ञायज्ञीयम् इति षट्पदानामर्थाः खलु
विशेषतो त्रियन्ताम्, उल्लिख्यताञ्जैतत्पुष्पिकाश्रुतं किन्नाम पर्यायसूक्त-
मितीति ॥

२५

SANSKRIT (E).

THIRD PAPER.

Examiner—ACHARYYA SATYA VRATA SÁMAŚRAMÍ.

The figures in the margin indicate full marks.

(संस्कृतभाषया संस्कृतान्तरेण प्रश्नोत्तराणि लेख्यानि .)

अथ ह्युक्तयुर्वेदश्च —

१ । “इषे त्वा” इति यजुस्संहिता-प्रथमकण्डिका कतिमन्त्रा-
त्मका ? तेषां मन्त्राणां व्याख्याविनियोगाव्यायिकाश्च अतपथब्राह्मणे

कीदृशाः समाज्ञाताः ? अपि तच्छ्रुतपथीयाख्यानतः किमपि विज्ञान-
मुपलभ्येत चेत् किं तदिति ।

१५

२ । “स्वाङ्गतोऽसि विश्वेभ्य इन्द्रियेभ्यो दिव्येभ्यः पार्थिवेभ्यो
मनस्त्वाष्ट्रं स्वाहा त्वा सुभव सूर्याय देवेभ्यस्तत्वा मरीचिपेभ्यो देवाः प्रो
यस्मै त्वेडे तत्सत्यमुपरिप्लुता भङ्गेन हतोऽसौ फट् प्राणाय त्वा व्यानाय
त्वा” – इति,

एषा कण्ठी व्याख्यायतां सदैवतविनियोगनिर्णयम्, स्वाङ्गत-
मरीचिप-फट्-शब्दार्थाभ्यो लिख्यन्तामिह विशेषतः ।

१५

३ । “एष ते रुद्र भागः सह स्वस्वाम्यिकाया तन्नुषस्व स्वाहा ।

एष ते रुद्र भाग आखुस्ते पशुः ॥” – इति,

एतद्यजुर्ह्यं व्याख्यायतामाख्यायताञ्च को रुद्रः ? का स्वसा
अम्यिका ? आखोः कथं रुद्रपशुत्वमिति ।

१५

४ । “समुद्रोऽसि विश्वव्यवा अजोऽस्यैकपादहिरसि बुध्नः” –

इति, एतद्यजुःश्रुतपदानां व्याक्रिया वाक्यार्थाश्च विव्रियन्ताम् ; अप्येत-
न्नाथीय-धिष्ण्य-ब्रह्मासन-सदोऽभिमर्शन-शालाह्वार्याभिमन्त्रणशब्दार्था-
श्चेह लिख्यन्तां विशेषेणेति ॥

१५

अथ माध्यन्दिनश्रुतपथब्राह्मणस्य –

५ । खुगाघारावदानपुरोडाशसान्नाय्यसामिधेनीशंयुवाकप्रेषाः

बोधयितव्याः ।

१५

६ । “अग्निर्वै स देवस्तस्यैतानि नामानि शर्व इति यथा प्राच्या
आवसते भव इति यथा बाह्वीकाः पशूनाम्यती रुद्रोऽग्निरिति तान्यस्या-
ज्ञान्तान्येवेतराणि नामान्यग्निरित्येव ज्ञान्ततमम्” – इति, तदिदं व्याख्या-
तव्यं साभिप्रायवर्णनम् ।

१०

७ । वर्थ्यताञ्च सतात्पर्याख्यानं श्रुतपथीयविदेष्टमाथवाख्यान-
मिति ।

SANSKRIT (E).

FOURTH PAPER.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

1. Indicate the general distinguishing characteristics of the Karma-kāṇḍa and the Jñāna-kāṇḍa of the Veda. In what ways do such actions as the Karma kāṇḍa enjoins, subserve knowledge?

2. Give an account of the general structure of the Chhāndoggya-Upanishad. Are there any indications of either of the two great Upanishads being older than the other?

3. The same *vidyā* is observed to occur in somewhat different forms in different śākhās of the Veda. How would you account for this fact? How does the Indian schoolman deal with these cases, and by what means does he undertake to reconcile apparent contradictions?

4. How does the Vedāntin account for the presence, in the Upanishads, of certain sections concerned with matters connected with sacrifices?

5. What is the general purport of the Shāṇḍilya-vidyā? Explain in detail the passage—

‘मनोमयः प्राणश्चरीरो भावः सत्यसंकल्प आकाशात्मा सर्वकर्मा सर्वकामः सर्वगन्धः सर्वरसः सर्वमिदमध्यात्तोऽवाक्यनादरः’ ।

6. With regard to the account Uddālaka Āruṇi gives (Chhāndoggya Upanishad VI. 1.) of the going forth of the elements from the *Sat*, Prof. Deussen remarks that ‘a certain relapse into Realism cannot be denied here.’ Do you consider this remark justified?

Describe the process of the पञ्चीकरण of the elements.

7. ‘तद्देवं तर्ह्यव्याकृतमासीत्तद्गामरूपाध्यामेव व्याक्रियत स एष इह प्रविष्टः’ ।

Explain what difficulties present themselves to the Vedāntin in connexion with the statement that the creator ‘entered the world’; and show how these difficulties are dealt with by Shankara.

8. ‘सा होवाच नेत्रेभ्यत्रैव मा भगवानब्रूमुहम् प्रेत्य संज्ञाऽस्तीति’ ।

Fully explain how the Vedāntin meets the doubt expressed in the above words of Maitreyī.

9. Comment on the few following passages :—

(a) यद्दे तन्न विज्ञानाति विज्ञानन्वे तन्न विज्ञानाति न हि विज्ञानु-विज्ञानेर्विपरिचोपो विद्यतेऽविनाशित्वात् ।

(b) अथाकामयमानो योऽकामो निष्काम आप्तकाम आत्मकामो न तेषां प्राणा उत्क्रामन्ति ब्रह्मैव सन् ब्रह्माप्येति ।

10. Discuss the question how far the मायावाद of the developed Vedānta is supported by the teaching of the two great Upanishads.

11. Give a careful translation into English of the following extract :—

तत्रैतस्मिन्नद्वैतविद्याप्रकरणेऽभ्युपगम्यसाधनान्युपासनान्युच्यन्ते । कैवल्यसं-
निकृष्टाणि चाद्वैतादीर्घा कृतब्रह्मविषयाणि मनोमयः प्राणशरीर इत्या-
दीनि कर्मसमुद्भूतफलानि च कर्माङ्गसंग्रहोनि । रहस्यसामान्यान्मनोवृत्तिसामा-
न्याश्च यथाऽद्वैतज्ञानं मनोवृत्तिमात्रं तथाऽन्योन्युपासनानि मनोवृत्तिरूपाणी-
त्यस्ति हि सामान्यम् । कस्तर्ह्यद्वैतज्ञानस्योपासनानां च विशेषः । उच्यते ।
स्वाभाविकस्याऽत्मन्यक्रियेऽधारोपितस्य कर्त्रादिकारकक्रियाफलभेदविज्ञानस्य
निवर्तकमनोवृत्तिरूपत्वात् । रज्ज्वादाविव सर्पाद्याधारोपलक्षणज्ञानस्य रज्ज्वा-
दिस्वरूपनिश्चयः प्रकाशनिमित्तः । उपासनं तु यथाशास्त्रसमर्पितं किञ्चिदा-
लम्बनमुपादाय तस्मिन्मनश्चित्तवृत्तिसंतानकरणं तद्विलक्षणप्रत्ययानन्तरित-
मिति विशेषः । तान्येतान्युपासनानि सत्त्वशुद्धिकरत्वेन वस्तुतत्त्वावभास-
कत्वादद्वैतज्ञानोपकारकाख्यालम्बनविषयत्वात् सुषाध्यानि चेति पूर्वमुपन्य-
स्यन्ते । तत्र कर्माभ्यासश्च वृद्धीकृतत्वात् कर्मपरित्यागेनोपासन एव दुःखं
चेतः समर्पणं कर्तुमिति कर्माङ्गविषयमेव तावदादावुपासनमुपन्यस्यते ॥

SANSKRIT (E).

FIFTH PAPER.

Examiner—ĀCHĀRYYA SATYA VRATA SĀMAŚRAMI.

The figures in the margin indicate full marks.

(संस्कृतभाषया संस्कृताक्षरेण प्रश्नोत्तराणि लेख्यानि .)

अथ व्याकरणस्य —

१ । लौकिकसूत्रैः सिद्धेऽत्रपि लडादिविधानेषु “कृन्दसि लङ्-
लुङ्लिटः”—इति सूत्रं कैतर्धिकं सम्पद्यते ?

२ । करोतेर्लङन्तस्य रूपाणि लिखितव्यानि ।

३ । “कृन्दस्युभयथा”—इत्येतस्योदाहरणे प्रदर्श्यताम् ।

९

४ । साट्वा, अग्राह, स्वप्रया, न्यधीदत्, अपस्पृधेयाम्, अन्वा-
पनीफयात्—इत्येतेषां लौकिकप्रतिरूपाणि प्रदर्शयन्तुति ॥

अथ निरुक्तम् -

५ । का देवताः ? कति सङ्गकाश्च ताः ? तासु मुख्यत्वं कासाम् ? किद्वत्तञ्च तन्मुख्यत्वम् ? मुख्यानां स्थान-कर्म-नाम-निर्वचनादीनि च किंविधानि ? २०

६ । “तद् यन्मोमे भावप्रधाने भवतः पूर्वापरीभूतं भावमाख्या तेनाचष्टे ब्रजति पचतौत्युपक्रमप्रभृत्यपवर्गपर्यन्तं भूतं सत्त्वभूतं सत्त्व-नामभिर्ब्रज्या पक्तिरित्यद इति सत्त्वानामुपदेशो गौरवः पुरुषो ह्यस्तीति भवतीति भावस्यास्ते श्वेते ब्रजति तिष्ठतीति” - इति व्याख्येयम् । २०

७ । किमिदमुक्तम् - “पुरुषविद्यानित्यत्वात् कर्मसम्पत्तिर्मेन्तो वेदे” - इति ? १५

८ । अरुणो मासकृद् वृकः पथा यन्तं ददर्श हि । उज्जिहीते निचाय्या तष्टेव पृथ्वागमयौ वित्तं मे अस्म रोदही” - इति । एष निगमो व्याख्यायताम्, तष्ट्वेत्युपमानोपमेयभावश्चेदोपपाद्यताम्, वृकशब्दश्च निर्वचनानि अर्थाश्च लिख्यन्ताम् । २०

९ । प्रथनात् पृथिवीत्याहुः क एनामप्रचयिष्यत् किमाधारश्च” - इति, याकवचनश्चेतस्य याक्कीयमेवोत्तरं आक्षेप्तुपपाद्यताम्, नो चेत् स्वयमेवोद्धतामिति ॥ १०

SANSKRIT (E).

SIXTH PAPER.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

ESSAY.

‘A contrasted sketch of those phases of Indian religious thought which are represented on the one hand by the Vedic Samhitas, more particularly the Rik Samhita, and on the other hand by the Brahmanas.’

COMPARATIVE GRAMMAR.

N.B.—Only FIVE questions to be taken up.

1. On what grounds does Max Müller controvert the views (a) that language is a conventional production ; and (b) that language is a purely natural growth.

2. What is understood by a dialect ? Explain and exemplify the process of dialectic regeneration. Hindustānī is not the daughter of Sans-

krit as we find it in the Vedas, or in the later literature of the Brahmans ; it is a branch of the living speech of India, springing from the same stem from which Sanskrit sprang. Elucidate this statement.

3. State and review the evidence for holding that before their separation the Aryans led the life of agricultural Nomads.

4. Discuss the principles of *sound* etymology. Give instances (1) of the same word appearing in different forms in the same language ; and (2) of the same word taking different forms in different languages.

5. Explain the meaning of, and illustrate by examples, the statement that ' even the most special names are really general terms.'

6. Give a concise sketch of the principal theories as to the origin of mythology.

7. Some comparative Philologists hold that the worship of a certain number of divinities acknowledged by different Aryan nations may be traced back to a period preceding the separation of those nations. Give details. What is at present the prevailing learned opinion on this question.

PALI.

FIRST PAPER.

DIGHA NIKAYA AND ANGUTTARA NIKAYA.

Examiner—PROF. DHARMANANDA KOSAMBI.

The figures in the margin indicate full marks.

1. *Imaṃ pālīṃ sammākāreṇa vaṇṇanāya saddhiṃ Ingḷisa-bhāsūya* 24
parivattehi :—

(a) " Santi hi kho pana samaṇa-brāhmaṇā paṇḍitā ḥipunā kata-parappavādā vāla-vedhī-rūpā vobhindantā maññe caranti paññāga-tena ditthi-gatāni—te maṃ tattha samanuyunḥeyyūṃ samanugāheyyūṃ samanubhāseyyūṃ. Ye maṃ tattha samanuyunḥeyyūṃ samanugāheyyūṃ samanubhāseyyūṃ tesāhaṃ na sampāyeyyāṃ. Yesāhaṃ na sampāyeyyāṃ so maṃ' assa vighāto. Yo maṃ' assa vighāto so maṃ' assa antarāyo " ti.

(b) " So evaṃ samāhite citte parisuddhe pariyaḍāte anaḥgaṇe vigatūpakkilese mudu-bhūte kammanīye tthe anejaḍḍatte nāna-dassanāya cittaṃ abhinīharati abhininnāmeti. So evaṃ pajānāti : " Ayaṃ kho me kayo rūpī catummahā-bhūtikko māā-pettika-sambhavo odana-kummās-upacayo anice-ucchadana-parimaḍḍana—bhedana-viddhamāsa-dhammo, idaṃ ca pana me viññāṇaṃ ettha sitaṃ ettha paṭibaddhaṃ ti."

(c) " Tenā kho pana samayena brāhmaṇassa Pokkharasādisa Ambattho mānavo antevāsī hoti ajjhāyako mantadharo tinnāṃ vedānaṃ pāragū saṅghaṇḍu-keṭubhānaṃ sakkharappabhedānaṃ itihāsa-paṇcamānaṃ, padako veyyakaraṇo lokāyata-mahāpurisa lakkhānesu anavayo anuññāta-paṭiññāto sake ācariyake tevijjake pāvacaṇe : ' yaṃ ahaṃ jānāmi taṃ tvaṃ jānāsi yaṃ tvaṃ jānāsi taṃ ahaṃ janamīti."

(d) " Puna ca paraṃ Mahāli bhikkhu pañcannaṃ orambhāgiyānaṃ saṃyojanānaṃ parikkhaya opapātiko hoti tatthaparinibbāyī anā-vatti-dhammo tasmā lokā. Ayaṃ pi kho Mahāli dhammo uttaritaro

ca pañitatero ca yassa sacchikiriya-hetu bhikkhu mayi brahmacariyam caranti."

(e) "Tañham vo bhikkhave desessāmi jālinim saritam visatam visattikam yāya ayaṃ loko uddhasto pariyonaddho tantākulakajjeto, gulagundikajjato, muñjababbajabhūto, apāyam, duggatim, vinipatam samsāram nātivattati."

(f) "Sotānugatanam bhikkhave dhammanam vacasā paricitānam manasānupekkhitānam dīṭṭhiyā suppaṭividdhānam cattāro ānisaṃsā pāṭikaṅkha."

(g) "Cattār' imāni bhikkhave balāni. Katamāni cattāri? Paṭisaṅkhānabalaṃ, bhāvanābalaṃ, anavajjabalaṃ, saṅgāhabalaṃ."

(h) "Ugghaṭṭaṇṇū, vipaccitaṇṇū, ñeyyo, padaparano--ime kho bhikkhave cattāro puggalā santo samvijjamānā lokasmim."

2. Retranslate into Pali:—

12

(a) "It is just as when a man should start a business with a borrowed capital and becoming successful therein should not only be in a position to clear the old debt he had incurred, but should also have a surplus over to maintain a wife."

(b) "There is a spot, sire, on the slopes of the Himalaya on the borders of a lake where there grows a mighty oak. It is there that they dwell, and to keep the purity of their line intact, they have married their own sisters." "Hearts of oak are those young fellows. Right well do they hold their own."

(c) "Transcending the consciousness of the infinity of cognition he comes to think that there is nothing that really is and attains and adheres to that mental state in which the mind is concerned merely with the unreality of things. Then, that sense of everything being within the sphere of infinite cognition which he had just had, passes away, and there springs up in him a subtle, but actual consciousness of unreality as the object of his thought."

3. *Esaṃ catunnaṃ pañhānaṃ aññatamaṃ thapetvā tayo Māga-dhikāya niruttijā vitthāreṇa yeva vyākūṭabbā:—*

18

(a) Sāmaññaphalasutte pana ye te aññatitthiyānaṃ cha satthāro vuttā tesam dīṭṭhiyo vittiāreṇa vyākaroḥi; api ca tesam nāmāni kathetabbāni.

(b) Kūṭadāḍḍasutte pana "sutaṃ m'etaṃ bho Gotama samaṇo Gotamā tividha-yaññasampadam soḷasaparikkhāraṃ jānātīti ettha kā tā tisso yaññassa sampadāyo? Ko ca pana soḷasaparikkhāro?"

(c) Subhasutte pana "Tinnam kho mānava khandhānaṃ so Bhagavā vannaṃvāli ahoṣi pe . . . katamesaṃ tinnam? Ariyassa silakkhandhassa, ariyassa samādhikkhandhassa, ariyassa paññakkhandhassa, idaṃ vuttam. Ime pana tayo khandhe vitthāreṇa vyākaroḥi."

(d) Kevaddha-sutte pana tīni pāṭihāriyāni Bhagavā vuttāni. Katamāni tāni? Ko ca iddi-pāṭihāriye ādinavo.

4. *Imāni padāni sammakāreṇa vyākaroḥi:—*

12

(a) Khāri vividham; (b) gottapatisāriṇo; (c) Saṅkhiya-dhamma; (d) avyāseka-sukham; (e) Bhūri-kamma; (f) ettaka-paramā.

5. *Imā catunnaṃ vannaṃvāya saddhim pūlin-sace pay-janam siya-parisodhetaṃ baddhukam Inglesa-bhāṣāya parivattetabbā:—*

Attā rajanīy-*su* piyarupābhinandino

5

bhena adhamā sattā baddhā vaddhenti bandhanam

gajen ca dosajā ca mohajaṇcāpi viddasu

Karonti kusalam kamman savighāraṃ dukkhuddayaṃ avijjū-nivāṇā posā andhabhūta acakkhukā

Yathā dhammā tathā santā na tassevanti maññaro

(b) Kuḍḍā thaddhā lapā siṅgi unnaḷā asamāhitā

3

Na te dhamme virūhanti Sammasambuddha-desito.

- (c) Rūpasokhummataṃ ſatvā vedanānañca sambhavaṃ 5
 Saññā yato ca samudeti atthaṃ gacchati yattha ca
 Sañkhāre parato ſatvā dukkhato no ca attato
 Sace sammadaso bhikkhu santo santipade rato
 dhāreti antimaṃ dehaṃ jetvā Māraṃ savāhanaṃ.
- (d) Rāh 'aggaraṃ attabhāvīnaṃ Mandhātā kāmaabhogīnaṃ 3
 Māro adhipateyyānaṃ iddhiyā yaśsā jalaṃ.
6. "Abhiññā pariyesaṇā sangaho, Māluṅkyaputto 8
 atthakulaṃ, dve ajaññā; balaṃ arañña kammunāti"
Imasmim uddāne yāni suttāni āgātāni, tāni
Sankhepen'ettha niddisatabbāni.
7. *Etesu dvīsū aññataro pañho Mūgadhikūya niruttiyā vyākūtabbo:—*
 (a) Cattāri imāni bhikkhave āpattibhayāniti hidaṃ vuttaṃ. 10
 Kāni pana tāni cattāri ?
 (b) Cattāro'me bhikkhave mahāpadese desesāmi taṃ suṇāthāti,
 hidaṃ vuttaṃ, Ke te mahāpadesā nāma ?

PALI.

SECOND PAPER.

PIṬAKA VERSE.

*Examiner—*PROF. R. PISCHEL, PH.D.

Of questions 2-8 and 9, 11 only FIVE need be answered.

1. Translate into English the following verses of Saṃkiccathera (Theragāthā 600-607):—

Yam ca aññe na rakkhanti yo ca aññe na rakkhati |
 sa ve bhikkhu sukhaṃ seti kāmesu anapēkkhavā || 600 ||
 acchodikā puthusilā gonaṅgulamigāyutā |
 ambusevālasaṃchannā te selā amayanti maṃ || 601 ||
 vasitaṃ me araññesu kandarāsu guhāsu ca |
 senāsanesu pantesu vālamiganisevito || 602 ||
 ime haññantu vajjhantu dukkhaṃ pappontu pāṇino |
 saṃkappam nābhijjānāmi ana iyaṃ dosasaṃhitā || 603 ||
 paricijño mayā satth^o katam buddhassa sāsanam |
 ohito gūruko bhāro bhavanē'ti samūhata || 604 ||
 yassa c' atthāya pabbajito agārasmā anagāriyam |
 so me attho anupatto sabbasamyojanakhayo || 605 ||
 nābbhinandāmi maraṇam nābbhinandāmi jivitaṃ |
 kālam ca paṭikaṅkhāmi nibbisam bhatako yethā || 606 ||
 nābbhinandāmi maraṇam nābbhinandāmi jivitaṃ |
 kālam ca paṭikaṅkhāmi sampejāno patissato || 607 ||

2. Explain the ending -e of the Accus. Plur. *aññe* in verse 600 and mention other Indian mediæval languages in which the same ending occurs.

3. In *rakkhati* and *bhikkhu* Sanskrit *kṣa* is represented in Pāli by *kkha*, while in *acchaka* and *churikā*, e.g., it is represented by *cca*. How is this difference to be explained from the Indo-European point of view ?

4. State the reason for which *ṣ* and *ṣ* in Pali, e.g. in *anapēkkhavā* (verse 600) and *pappōti* (verse 603), must be considered short.

5. Explain *ganāṅgula* (verse 601) and point out some more words in Pāli, Prākṛit, and other Indo-European languages, in which *l* has been changed to *n*.

6. Point out any divergences found in verses 603 and 605 from the regular scheme of metre, and explain each case of divergence.

7. In *miga* (verses 601, 602) Sanskrit *ṛ* is represented by *i*, in *kata* (verse 604) by *a*, and in *puthu* (verse 601) by *u*. Explain the difference and state what you know of this history of the *ṛ*-vowel in the Indo-European languages with special regard to Pāli.

8. In what grammatical relation does *ṇisevite* (verse 602) stand to *senāsanesu*? Do you know of similar cases in the R̥gveda?

9. Translate into English the following verses of Mahāpajāpatī Gotamī (Therīgāthā, verses 158, 159):—

Sabbadukhaṃ pariññātāṃ hetutanhā vicositā |
ariyattaṅgikō maggo nirodho phusito maya || 158 ||
mātā putto pitā bhātā ayyika ca pure ahum |
yathābhuccam ajānanti samsarī 'haṃ anibbisam || 159 ||

Explain these verses in detail and try to make out the correct meaning of *anibbisam* (compare note on Therīgāthā, verse 143).

10. Write short notes on the grammar and derivation of the following words occurring in the Thera- and Therīgāthās: *morā supekhuṇā*; *idha vā huraṃ vā*; *pītvāna*; *catukkhattum*; *tiladaṇḍakā-riva*; *nisinna*; *rukkha* (tree); *thera*; *dinna*; *majjhima*; *susāna*.

11. Translate into English the following stanza of Sumanā (Therīgāthā 14).

Dhātuyo dukkhato disvā mā jāti punar āgami |
bhave chandaṃ virājetvā upasantā carissasi ||

Explain the Ablative *dukkhato* and the Gerund *disvā*.

PALI.

THIRD PAPER.

KACCAYANO, MILINDA, AṬṬHASĀLINI.

Examiner—PROF. DHARMANANDA KOSAMBI.

The figures in the margin indicate full marks.

A. Kaccayano.

1. Etthā nidditthāni imāni suttāni
Ingliśa-bhasā-parivattane ye dosā santi te
dassetvā sayam eva Ingliśa-bhāsāya
sammākārena vaṇṇotabbāni :— 10

(a) 'Jinavacanayuttamhi.'

"The rules of Pāli Grammar are applicable to the discourses of Buddha."

(b) 'lingaṇca nipaccate.'

"The crude forms or stems of words are determined here just as they are found in the discourses of Buddha."

(c) 'mā gūṇam agāmo ṭhāne.'

"If the initial vowel of a word be 'i' or 'u,' the vowel 'a' is augmented in some instances, and the initial vowel is lengthened."

2. "Tatoca vibhattiyo."

(a) Iccatra kā pāna tā vibhattiyo ?

(b) 'Si-vibhattiyā kiṃ payojanam ?

(c) Imāsu sabbāsu 'pi vibhattisu

'jha'—'lu'—'gha'—saññakānam
saddānam kīdisāni rūpāni honti ?

3. *Tīja-gupa-kita-mānehi* ke paccayā vā honti ?

Kāni ca pana tesam vattamānāyam rūpāni honti ?

4. *Samatho, maccheram, acchariyam, allam, kalam, mallo. . .*

iccetesam saddānam kehi guttehi padasiddhi hoti ?

5. Translate and explain carefully:—

'pubbam adhoḥītam assaram sareṇa viyojay'

What is the exact meaning of 'adhoḥītam,' and what clue does it afford as to the date of the composition of the Grammar ?

B. Milindapañho.

6. Ime dve pañhe Māgadhikāya Niruttīyā vyākaroḥi:—

(a) Yo jānanto pāpa-kammaṃ karōti, yo ca ajānanto kassa bahutaram apuññan ti ayam pañho Nāgasenatherena katham vyākato ?

(b) Buddhho brahmacāriti ayam panho Nāgasenatherena katham vyākato ?

7. Translate into English:—

(a) "Idh' ekacce tiṭṭhiyā: udakam jivatīti sitūdakam patikkhipitvā udakam tāpetvā vekatikavekatikam paribhuñjanti, te tumhe garahanti paribhavanti: ekindriyam samanā Sakyaputtiyā jivam vihetthentīti; tam tesam garaham paribhavam vinodehi apanehi nicchārehīti."

(b) "Yo so mahārāja supinam passati na so niddāyanto passati nāpi jagganto passati, api ca okkante middhe asampatte bhavaṅge etth' antare supinam passati. Middhasamāruhassa mahārāja cittaṃ bhavaṅgagataṃ hoti, bhavaṅgagataṃ cittaṃ nappavattati, appavataṃ cittaṃ sukhadukkham na ppajānāti, appaṭivijānantassa supino na hoti, pavattamāne citte supinam passati."

8. Re-translate into Pali:—

'And again, O king, just as the carpenter, discarding the soft parts of the wood, takes the hard parts; just so, O king, should the strenuous Bhikshu, earnest in effort, forsaking the path of the discussion of useless theses, to wit the everlasting life theory—the let-us eat-and-drink-for-to-morrow-we-die theory—the theory that the soul and the body are one and the same—that the soul is one thing, the body another—that all teachings are alike excellent—that what is not done is of no avail—that men's actions are of no importance—that holiness of life does not matter—that on the destruction of beings nine new sorts of beings appear—that the constituent elements of being are eternal—that he who commits an act experiences the result thereof—that one acts and another experiences the result of this action—and other theories of Karma or wrong views on the result of actions—forsaking, I say, all such theses, paths which lead to heresy, he should learn what is the real nature of those constituent elements of which each individually is, for the short term of its individuality

put together, and so reach forward to that state which is void of lusts, of malice, and of dullness, in which the excitements of individuality are known no more, and which therefore designated the Void Supreme."

C. *Atthasālinī*.

9. (a) Kāmāvacaraṃ kusalaṃ cittaṃ uppannaṃ
hoti ettha kin nāma taṃ kāmāvacaraṃ
kusalaṃ cittaṃ ? Kāni paṇ'assa
lakkhana-rasa-paccupatthāna padatthanaṇi
vitthārena vyākaroḥi.
- (b) Yevāpanakaṃ iccetassa byākaraṇa-niyamena
ko attho bhavituṃ arahati ? ke vā pana
dhammā yevāpanakena sangahitā ?
- (c) Kāni pana tāni attha akkhaṇāni nāma ?
kānakacchapopamāya pana ko attho,
saṅkhepena vyākaroḥi.
- (d) "Tasmimsamaye vitakko hoti, vicāro hoti,
pīti hoti, sukhaṃ hoti, cittakāggatā hoti"
itihidaṃ vuttaṃ Kattha pana ete honti.
kāni vā pana etesaṃ lakkhaṇāni.

10. Write full notes on :—

Dīghabhāṇakā ; Adhimuccanaṃ ; Pahattha-citta-bheṇḍuko ;
Sannitthāpaka-cetanā ; bhūma-niddeso ; akathāṃkathī.

11. Translate into English, adding brief notes on the subject-matter :—9

(a) 'Ditthe dhamme ca yo c'attho yo c'attho samparāyiko
atthābhisaṃyā dhiro paṇḍito ti pavuccati ti. Tesu paṇḍitasaṃmaggi
samavāyo khaṇo pana eko va navamo ñeyyo cakkāni caturo pi vā.'

(b) 'Tihi pi c'etehi yathā patipātiyā nekkhammasaṇṇā avyāpā-
dasāṇṇā avihimsāsaṇṇā ti imā tisso saṇṇāyo honti, asubhasaṇṇā appa-
mānasaṇṇā dhātusaṇṇā ti imā tisso saṇṇāyo honti. Alobhena kāma-
sukhallikānuyogantassa parivajjanaṃ hoti, adosena attakilamānu-
yogantassa pativajjanaṃ hoti, amohena majjhimāya patipattiya
patipajjanaṃ. Tathā alobhena abhijjākāyaganthassa pabhedanaṃ
hoti, adosena vyāpādakāyaganthassa, amohena sesaganthadvayassa.'

(c) 'Saddhāruciākāraparivitakkaditthinijjhānakhānīdinaṃ pa-
na vasena vitthāro etesaṃ manodvāre āpāthagamaṇaṃ veditabbaṃ
eva. Yasmā paṇ'eva āpāthain āgacchantāni bhūtāni pi honti abhū-
tāni pi, tasmā a' am nayo atthakathāya na gahito. Evaṃ ekekā-
rammana-javanaṃ dvīsu dvīsu dvāresu uppajjati ti veditabbaṃ
Rūpārammanaṃ hi javanaṃ cakkhuvāre pi uppajjati manodvāre pi,
saddādiarāmmaṇesu pi es'eva nayo.'

12. Translate and fully explain the following passages, correcting the text of the Pali Text Society's edition where necessary, and indicating the context in each instance :—

(a) 'Evaṃ tasmim cittaniyamite samaye etesaṃ ti samuhakiccā-
rammaṇaghanavasena duranubodhappabhede phassavedanādayo
dhamme bodhetuṃ ti attho dittho hoti.'

(b) 'Sābhāvena hi kārake asati kāraṇāntarāpekkhā ayuttā ti.
Evaṃ ekassa kassaci kārakassa abhāvadīpanena sayamkatam sukhāṃ
dukkhaṃ ti ādi patisedhitaṃ hoti.'

(c) 'Tesaṃ bhāve bhāvato asāmaggiyaṃ ahetunaṃ pi ca sāmaggi-
yaṃ c'assa bhāvena bhāvo veditabbo ti.'

(d) 'Uppajjamānaṃ uppanaṃ ti ? āmantā ti ettha khaṇattaya-
gate. Svāyaṃ idhāpi khaṇattayagato va datthabbo.

Kasmā uppanaṃ hoti ti ? ettha khaṇattayagataṃ hoti vattamā-
naṃ hoti, paccuppannaṃ hoti ti ayaṃ saṅkhepattho.'

PĀLI.

FOURTH PAPER.

HISTORY OF LITERATURE AND LANGUAGE.

Examiner—PROF. R. PISCHEL, PH.D.*Of these questions only six need be answered.*

1. In the Sāmaññaphalasutta (Dighanikāyā I, p. 53, § 20) occurs the following passage : *n' atthi attakāre n' atthi parakāre n' atthi purisakāre*. What conclusion can be drawn from passages like this as to the language of the earliest canon of the Buddhist scriptures ?

2. Verse 606 of the Theragāthā :

nābhinandāmi maraṇaṃ nābhinandāmi jivitaṃ |
kālaṃ ca paṭikaṅkhāmi nibbisaṃ bhatako yathā ||

is attributed to Saṃkiēcāthera. It also occurs in verse 685 and is there put in the mouth of Aññakondaññāthera. It further occurs in a nearly identical form in verse 1003 as uttered by Sāriputta, in Manu 6, 45 and in Mahābhārata 12, 245, 15. How is this fact to be explained from the literary point of view ?

3. Which is the earliest literary document about the last months of Buddha's life ? Mention also later sketches of Buddha's life in Pāli, mixed and pure Sanskrit.

4. What is the earliest Indian Buddhist inscription ? Where, and by whom, was it discovered, in which alphabet is it written, and what are its contents ?

5. Write an essay on the legend of Kisāgotamī as told in the commentary to Therīgāthā 213 foll.

6. Discuss the history of the Jātaka Book.

7. What part does Pāli play in the linguistic history of India, and in which region of India was it probably spoken ? Give reasons for your reply.

8. Mention some roots given in the Dhātupāṭha which are not traceable in the accessible Sanskrit literature, but are found in Pāli.

9. What is the correct translation of Pāli *devaputta* ? Mention some other Pāli words in which *putta* has the same meaning.

10. State what you know about the Leṇa-dialect.

PĀLI.

FIFTH PAPER.

HISTORY OF POLITICS AND RELIGION.

Examiner—PROF. R. PISCHEL, PH.D.*Of these questions only six need be answered.*

1. Give a list of the principal cities existing in India in the time of Buddha.

2. Sketch, in an essay, the history of the Sākiya clan.
3. How far can Megasthenes be trusted? In which Pāli book is the prophecy concerning Pātaliputra found, and how is the name of this capital probably to be explained?
4. Is any historical value to be attached to the list of former Buddhas as given, e.g., in the Buddhavaṃsa? State what you know about the discovery of Koṇāgamana's stūpa.
5. Can Buddha rightly be called a social reformer? Give reasons for your reply.
6. What part did Buddha's stepmother Mahāpajāpatī Gotamī play in the history of the Buddhist order?
7. Give a sketch of the disposal of the dead in Buddha's time.
8. Give your reasons why the belief of the Buddhists, that the whole of the Three Piṭakas was spoken by Buddha, is unfounded.
9. Explain the terms *sakkāyaditthi*, *vicikicchā*, and *sīlabbataparāṃsā*.
10. What to the Buddhist is the soul of man?

PALI.

SIXTH PAPER.

UNSEENS AND TRANSLATION.

Examiner—PROF. DHARMANANDA KOSAMBI.

The figures in the margin indicate full marks.

- Translate into English prose adding brief notes where necessary :—
- (a) Jīvitam attabhāvo ca sukhadukkhā ca kevalā 15
 ekacittasamāyuttā lahuso vattate khaṇo-
 cullāsīti-sahasāni kappam tiṭṭhanti ye marū
 natveva tepi tiṭṭhanti dvicittēhi samohitā.
 Ye niruddhā marantaṣṣa tiṭṭhamānassa vā idha
 Sabbe'va sadiṃ khandhā gatā appatisandhiḥ,
 Anantarā ca ye bhaggā ye ca bhaggā anāgate
 tadantarā niruddhānam vesamman natthi lakkhaṇe
 anibbattena na jato paccuppannena jīvati
 citta bhaṅgā mato loko paññatti paramatthiyā
 anidhānagatā bhaggā puñño natthi anāgate
 nibattā ye' pi tiṭṭhanti aragge sāsapūpamā
 Nibbattānaṃca dhammānaṃ bhaṅgo nesaṃ purakkhatī.
 pelokadhammā tiṭṭhanti purimehi amesiṭā
 adassanato āyanti bhaṅgā gacchanty adassanaṃ
 vijjuppādo' va ākāse uppajjanti veyanti ca.
- (b) Iti me pasannamatino ratanattayavandanāmayam puññaṃ 10
 Yam Suvihatantarāyo hutvā tassānubhāvena
 Dīghassa dīghasuttamkitassa nipuṇassa āgamavarassa
 Buddhānubuddhasamvannitassa saddhāvahugunassa
 Atthappakāsanattham atthakathā ādito vasiṭelhi
 Panchai yā saṅgītā anusaṅgītā ca pacchā'pi
 Sīhaladīpaṃ pana ābhatātha vasiṇā Mahā-Mahindena
 Thapitā Sīhalabhāsāya dīpavāsinaṃ atthāya
 Apānetvāna tato haṃ Sīhalabhāsaṃ manoramaṃ bhāsaṃ
 Tantiyaṇucchavikaṃ āropento vigatadosaṃ
 Samayaṃ avilomento therānaṃ theravaṃsappadīpaṇaṃ

Sunipunavinicchayānam Mahāvihārādhivāsīnam
 Hitvā punappunāgatam attham attham pakāsayissāmi
 Sujanassa ca tuṭṭhattham ciraṭṭhitatthāni ca dhammassa.
 Silakathā dhuḍḍadhammā kammaṭṭhānāni c'eva sabbāni
 Cariyāvidhānasuhito jhānasamāpattiviṭṭhāro
 Sabbā ca abhiññāyo paññāsarnkalananicchayo c'eva
 Khandhadhātāyatanaṇḍriyāni ariyāni c'eva cattāri
 Saccāni paccayākāraḍesaṇā supariṣudhanipūṇanayā
 Avimuttatantimaggā vipassanā bhāvanā c'eva
 Iti pana sabbam yasmā Viuddhimagge mayā supariṣuddham
 Vuttam tasmā bhīyo na tam idha vicārayissāmi.

2. Translate into Pali prose in the style of the Kāvya :—

24

Though one were strong as seven,
 He too with death shall dwell,
 Nor wake with wings in heaven,
 Nor weep for pains in hell ;
 Though one were fair as roses,
 His beauty clouds and closes ;
 And well though love reposes,
 In the end it is not well.

Pale, beyond porch and portal,
 Crowned with calm leaves, she stands
 Who gathers all things mortal
 With cold immortal hands ;
 Her languid lips are sweeter
 Than love's who fears to greet her
 To men that mix and meet her
 • From many climes and lands.

She waits for each and other,
 She waits for all men born ;
 Forgets the earth her mother,
 The life of fruits and corn ;
 And spring and seed and swallow
 Take wing for her and follow
 Where summer song rings hollow
 And flowers are put to scorn.

There go the loves that wither,
 The old loves with wearier wings ;
 And all dead years draw thither,
 And all disastrous things ;
 Dead dreams of days forsaken,
 Blind buds that snows have shaken.
 Wild leaves that winds have taken,
 Red strays of ruined springs.

We are not sure of sorrow,
 And joy was never sure ;
 To-day will die to-morrow ;
 Time stoops to no man's lure ;
 And love, grown faint and fretful,
 • With lips but half regretful
 Sighs, and with eyes forgetful
 Weeps that no loves endure.

From too much love of living,
 From hope and fear set free,
 We thank with brief thanksgiving
 Whatever gods may be

That no life lives for ever ;
That dead men rise up never ;
That even the weariest river
Winds somewhere safe to sea.

3. Translate into English with brief explanatory notes:—

16

(a) "Indriya-samattapaṭipādanam nāma, saddhādānam indriyānam sambhāvakaṇaṇam. Sace hi'ssa saddhindriyaṃ balavaṃ hoti itarāṇi, mandāni, tato viriyindriyaṃ paggaḥakiccāṃ, satindriyaṃ upatthānakkiccāṃ samāhindriyaṃ, avikkhepakiccāṃ paññindriyaṃ dassanakkiccāṃ kātum na sakkoti; tasmā taṃ dhammasa bhāvapaccavekkhanena vā yathā vā manasikaroto balavaṃ jātāṃ, tathā amanasikāreṇa hāpetabbaṃ. Vakkalitheravattu e'ttha nidassanaṃ. Sace pana viriyindriyaṃ balavaṃ hoti, atha n'eva saddhindriyaṃ adhimokkakkiccāṃ kātum sakkoti, na itarāṇi itarakkiccabhedāṃ; tasma taṃ passa! dhādi bhāvanāya hāpetabbaṃ. Atrāpi Soṇatthera-vattu dassetabbaṃ. Evaṃ s'esu pi ekassa balavabhāve sati itaresaṃ attano kiccesu asamatthau veditabbā. Visesato pana ettha saddhā-paññānaṃ samādhi-viriyaṇaṇa samatāṃ pasāṃsanti; balava-saddho hi mandapañño muddhappasanno hoti, avatthussim pasīdati. Balavapañño mandasaddho kerāṭikapakkhaṃ bhajati. Bhesajjasamuttāho viya rogo atekiccho hoti. Ubhinnaṃ samatāya vatthussim yeva pasīdati. Balavasamādhim pana mandaviriyaṃ samādhissa kosajjapakkhattā kosajjaṃ abhibhavati. Balavaviriyaṃ mandasamādhim viriyasā uddhacca-pakkhattā uddhaccaṃ abhibhavati. Samādi pana viriyeṇa saṃyojito kosajje patitum na labhati. Viriyaṃ samādhinā saṃyojitaṃ uddhacco patitum na labhati; tasmā tadubhayaṃ samaṃ katabbaṃ ubhaya-samatāya hi appaṇā hoti.

(b) Tasmim Samaye Sakalalokavasavattī Vasavattimāro . . . 12
taṃ sabhaṃ mālāgūlakusumadāmapupphavutthicananacunnaku-
sumareṇudibbagandhabhāvaṃ upagataṃ disvā, lokantarika-
ghoraṃ andhakāraṃ nāpetvā, avijandhakārassāpi viddhamsakassa
tassa sarirarasminā dinakara-ahassuggamanam iva jātāṃ ālokaṃ
oloketvā, kopoparattamukhaṃaṇḍalavijambhitabhākutibhinisanave-
sadhāri Merumandaraṃ pi veḷukalīraṃ iva khaṇḍayantaṃ
atitikkhaṇaṃ dibbānubhāvopetaṃ khuradhāraṃ cakkāyudhaṃ
vissajjitvā, taṃ kusumacchattabhūtaṃ passitvā, Mārasenāya pi
vissajjitāni mahantāni Mārānubhāvopetāni dhūpāyantaṃ pajjalantaṃ
pabbatakūtāni mālāgūlabhāvaṃ āpannāni disvā, sañjātasoko
taṃ dubbāritayasavisaram upasaṅkamma: "Uttahā Siddhattha,
pallaṅko maṃ evāyaṃ pāpuṇātīti," vatvā, tena ajeyyavikkamena
"Māra, imassa pallaṅkassa hetubhūtasā kalyāṇakammassa
katabhāve tava ko sakkhīti?" vutte, "Sabbe ime sakkhino ti."
Mārasenābhimukhaṃ hatthaṃ pasāretvā, palayajalanidhinig-
ghosābhibhavanīyena tumulaghoraghosena: "Ahaṃ sakkhī, ahaṃ
sakkhīti," "Mārasenāya sakkhibhāvaṃ dāpetvā: "Ko te, siddhat-
tha, sakkhīti," vatvā, tena asama-parakkama: "Mayhaṃ ettha
sacetana-sakkhino na santīti," rattajaladharagabbhato nikkhanta-
kaṇicanavijjam iva cīvaragabbhato dakkhiṇakaraṃ nīharitvā avania-
bhimukhaṃ katvā, pāramībhūmiyaṃ unnaditvā "Idāni kasmā
nissaddāsi?" vatvā, mahāpathaviyā ane ka ravasate muṇcāpīte Māro
Vasavattī avasavattī hutvā, bhītatasito saha Māraparisaṃ gahitā-
vudhābharaṇavattāni pahāya, abhimukhāya disāya yāva cakkavā-
lācalaṃ palāyī.

4. Translate into Pali prose:—

24

"Seradj-ed-doulah finding himself left alone for a whole day in his palace, without a single friend to unbosom his mind with, and with-

out a single companion to speak to, took a desperate resolution. In the dead of the night he put Lutf-en-nessa, his consort, and a number of favourites into covered coaches and covered chairs, loaded them with as much gold, and as many jewels as they could contain, and taking with him a number of elephants with his best baggage and furniture, he quitted his palace about three in the morning, and fled ; it was the seventh of Shewal. By one of those fatalities so conspicuous in the fate of persons of high stations, and which proceeded from his own ignorance of the world, and the unsteadiness of his temper, instead of taking to the left hand, and going to Radj-mahl, as he had determined at first, he struck to the right, and went to Bagvangolah, where he immediately embarked on a number of boats which are at all times kept ready in that station. But if instead of taking that fatal resolution, he had continued his journey by land, as it had been his intention, and had sent notice to some Commanders of his, who had not yet joined the malcontents, it is past doubt that numbers of them would have followed him, through personal attachment, and many more by a principle of avarice and ambition ; in a few hour's time he would have been joined by some thousands ; and people seeing him so well accompanied, would have not have dared to oppose his journey. It is even probable that his retinue would have swelled at every stage, and that he would have found himself at last at the head of a respectable force. But what man has had it in his power to withstand his own destiny ; and how is it possible to parry the decrees of an impending fate ? Seradj-ed-doulah, now in his boats, was advancing on his way to Azimabad ; for on the first motions of the English from Calcutta he had written a pressing letter to M. Law to recommend his coming down immediately, without losing a moment. Unfortunately, instead of a bill of exchange, he had sent him an order upon the treasury of the province of Azimabad ; and as slowness of motion seems to be of etiquette with the people of Hindustan, the disbursing of this money took up so much time, that when Law had come down as far as Radj-mahal, he found that all was over, and that Seradj-ed-doulah was no more ; his person having already been seized by Mir-djaaffer-qhan's people, who had completed their revenge upon him. M. Law having arrived at Radj-mahal, soon heard of the catastrophe, and he returned to Azimabad. He was hotly pursued by Major Coote, who had now come with the title of General from Europe, and was then only a Major with Colonel Clive ; his orders were to pursue vigorously, and in case of need, to fight. In fact he pursued incessantly ; but Law having gained a day's march upon him, continued retreating until he was beyond Bacsar, and beyond the Keremnassa, that is, until he had been chased beyond the last limits of Seradj-ed-doulah's dominions ; after which the Major returned to his Commander."

ARABIC.

FIRST PAPER.

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.),
M.R.A.S.

The figures in the margin indicate full marks.

N.B.—Vowel-points should be given on all written Arabic.

I.

٢٤ — ترجموا الى الانجليزية ... اربعة من القطع التالية التي
اخذت دواوين شعراء المعلقات - واذكروا مهماتها الادبية بالايجاز:—

(أ) بَكَى صَاحِبِي لَمَّا رَأَى الدَّرَبَ دُونَهُ

وَأَيَقَنَ أَنَّا لَاحِقَانِ بِقَيْصَرٍ

فَقُلْتُ لَهُ لَا تَبْكِ عَيْنُكَ إِنَّمَا

نُحَاوِلُ مُلْكًا أَوْ نَمُوتُ فَنُعْذَرَا

وَإِنِّي أَذِينُ إِنْ رَجَعْتُ مُمْلِكًا

بَسِيْرٍ تَرَى مِنْهُ الْفَوَاقِقَ أَزُورَا

عَلَى ظَهْرِ عَادِيٍّ تُعَارِبُهُ الْقَطَا

إِذَا سَافَهُ الْعَوْدُ الدِّيَا فِي جَرَجَرَا

(ب) لَمَنِ الدِّيَارُ بِقُنَّةِ الْحَجَرِ

أَقْوَمِينَ مِنْ حَجَجٍ وَمِنْ دَهْرٍ

وَلَأَنْتَ أَشْجَعُ مِنْ أَسَامَةِ إِذْ

دُعِيَ الزَّرَالُ وَلَمْ يَكُنْ فِي الدُّعَا

وَلَا أُنتَ تَفْرِي مَا خَلَقْتَ وَبَعَثَ
 فِي الْقَوْمِ يَخْلُقُ ثُمَّ لَا يَفْرِي
 لَوْ كُنْتَ مِنْ شَيْءٍ سِوَى بَشَرٍ
 كُنْتَ الْمُنَوَّرَ أَيْلَةَ الْبَدْرِ
 مَا تَقْطُرُونَ بِمَالٍ وَرَدَّةٍ فِيكُمْ (ج)
 صَنَعَ الْبَنُونَ وَرَهْطُ وَرَدَّةٍ غَيْبُ
 قَدْ يَبْعَثُ الْأَمْرَ الْعَظِيمَ صَغِيرَةً
 حَتَّى تَظَلَّ لَهُ الدِّمَاءُ قَصَبُ
 وَالظُّلْمُ فَرَقَ بَيْنَ حَيٍّ وَآلٍ
 بَكْرُ تُسَاقِيهَا الْمَنَآيَا قَلْبُ
 وَالصِّدْقُ يَأْلِفُهُ الْكَرِيمُ الْمُرْتَجَى
 وَالْكَذِبُ يَأْلِفُهُ الدِّينِيُّ الْآخِيبُ
 بَكَرَتْ تُخَوِّفُنِي الْعُتُوفُ كَأَنَّيْ (د)
 أَصْبَحْتُ عَنْ عَرَضِ الْعُتُوفِ بِمَعْرِزٍ
 فَاجْبَتْهَا إِنَّ الْمَذِيَّةَ مَنَهْلُ
 لَا بَدَّ أَنْ أُسْقَى بِذَلِكَ الْمَنَهْلِ
 فَانْتَبَيْ خِيَاكَ لَا إِدَاكَ وَأَعْلَمِي
 أَنِّي أَمْرٌ سَامُوتٌ أَنْ لَمْ أَقْتُلْ

إِنَّ الْمَنِيَّةَ لَوُ تُمَثَّلُ مُثَلَّتٌ
 مِثْلِي إِذَا نَزَلُوا بِصْنَكِ الْمَنْزِلِ
 أَرَى الْجَزَارَ يَشْحَذُ شَفَرَتَيْهِ (٤)
 إِذَا هَبَّتْ رِيَّاحُ أَبِي عَقِيلِ
 أَشَمُّ الْأَنْفِ أَعْيَدُ عَامِرِي
 طَوِيلُ الْبَاعِ كَالسَّيْفِ الصَّقِيلِ
 وَفِي آبْنِ الْجَعْفَرِيِّ بِحُلْفَتَيْهِ
 عَلَى الْعَلَاتِ وَالْمَالِ الْقَلِيلِ
 بَنَحَرَ الْكُومِ إِذَا سَحَبَتْ عَلَيْهِ
 ذِيُولَ مَبَا تَجَابُوبُ بِالْإَصِيلِ

II.

٢ — فسروا فى العربية :—

15

(١) كَمِيت يَزُلُّ اللَّبْدُ عَنْ حَالٍ مَتْنِهِ
 كَمَا زَلَّتِ الصَّفَوَاءُ بِالْمَتَفَزَّلِ
 عَلَى الذَّيْلِ جِيَّاشٌ كَانَ اهْتِزَامُهُ
 إِذَا جَاشَ فِيهِ حَمِيهِ عَلَى مَرَجَلٍ
 مَسْمُوحٌ إِذَا مَا السَّابِحَاتُ عَلَى الْوَنِيِّ
 أَثَرْنَ الْغُبَارَ بِالْكَدِيدِ الْمُرْكَلِ
 يَزُلُّ الْغَلَامُ الْخَفَّ عَنْ صَهْوَاتِهِ
 وَيَلْهَوِي بِأَثْوَابِ الْعَنِيْفِ الْمَثْقَلِ

درپر دخذ روف الوليد امرة
 تنابع كفيه بخيط موصل
 له ايطلا طبي وساقا نعامة
 و ارخاء سرحان و تقريب تنفل
 ضليع اذا استند برقه سد فرجه
 بضاف فوق الارض ليس باعزل
 و اتلع نهاض اذا معدت به (ب)

كسكان بوسي بدجلة مصعد
 و جمجمة مثل العلاء كانما
 وعى الملقى منها على حرف مبرد
 و خد كقرطاس الشامي و مشفر
 كسبت اليماني قده لم يحدود
 و عينان كالماورئين استكنفا
 بكهفي حجاجي صخرة قلت مورد
 طحوران عوار القذي فتراهما
 كمكحولتي مذعورة ام فرقد
 و صادقنا سمع التوجس للسري
 لهجس خفي او لصوت ممدد
 مولتان تعرف العنق فيهما
 كسامعتي شاة بحومل مفرد
 و قال ساقضي حاجتي ثم اتقى (ج)

عدوي بالف من ورائي ملجم
 فشد ولم يفزع بيوتا كثيرة
 لدى حيث القت رحلها ام قشعم
 لدى اسد شامي السلاح مقذف
 له لبد اظفارة لم تقلم

جرى متى يظلم يعاتب بظلمه
 سريعاً والا يبد بالظلم يظلم
 رموا ظمأهم حتى اذا تم اوردوا
 غماراً تفري بالسلاح و بالدم
 فقصوا مفايا بينهم ثم اصدروا
 الى كلاً مستوبل متوخم
 لعمر ك ما جوت عليهم رماحهم
 دم ابن نهيك او قتل المتلم

III.

٣ — ترجموا الى الانكليزية :—

(١) حتى اذا انحسر الظلام واسفرت
 بكوت نزل عن الثرى ازلامها
 علقت تردد في نهاء صعائد
 سبعا تواما كاملاً ايامها
 حتى اذا يئست واستحق حلق
 لم يبله ارضاعها وفطامها
 و تسمعت رز الانيس فراعها
 عن ظهر غيب و الانيس سقامها
 فعدت كلاً الفرجين تحسب انه
 مولى المخافة خلفها وامامها
 حتى اذا يئس الوماة و ارسلوا
 غضفا دواجن قافلاً اعصامها
 فلاحقن و امتكرت لها مدرية
 كالسمهرية حدها و تمامها
 لتذودهن و ايقظت ان لم تذد
 ان قداحم من الحثوف حمامها

فتقصدت منها كساب فصرجت
 بدم و غودر في المكر سخامها
 (ب) و ان الظغبى بعد الظفن يفشو
 عليك و يخرج الداء الدفيننا
 ورثنا المجد قد علمت معد
 نطاعين دونه حتى يبيننا
 و نحن اذا عماد الحى خرت
 على الاحفاض نمنع من يلينا
 نجد رؤسهم فى غير بر
 فما يدرون ما ذا يتقونا
 كان سيدوفنا منا و منهم
 مخاريق بايدي لاعبيننا
 كان ثيابنا منا و منهم
 خضبين بارجوان از طليتنا
 اذا ما عي بالاسفاف قوم
 من الهول المشبه ان يكونا
 ليس منا المضربون ولا قيد
 (ج) س ولا جندل ولا الحذاء
 ام جنايا بني عتيق فمن يغ
 در فانا من حزبهم براء
 و ثمانون من قميم بايدي-
 هم رماح صدورهن القضاء
 قركوهم ملعبين و آبوا
 بنهاب يصم منه الحذاء
 ام علينا جري حنيفة ام ما
 من محارب عذراء

ام علينا جري قضاة ام ليس
علينا فيما جنوا افداء

IV.

Either

٣ — اجيبوا احدا من هذين السؤالين * اما الالف
او الباء: —

(١) اقتبسوا اياتا ما من المعلقات قلم الى الايات
التالية لشكسبير: —

(EXTRACTS FROM SHAKESPEARE).

1. "The worthy fellow is our general
He's the rock, the oak not to be wind-shaken"
Coriolanus.
2. "In war was never lion raged more fierce
In peace was never gentle lamb more mild."
Richard II.
3. "My derivation was from ancestors
Who stood equivalent with mighty kings."
Pericles.
4. "Pity you ancient stones my tender babes.....
So foolish sorrow bids your stones farewell."
Richard III.
5. "If impious war
Arrayed in flames like to Prince of fiends."
Henry V.
6. "Whilst any trump did sound or drum struck up
His sword did no'er leave striking in the field."
Henry VI.

Or

(ب) فسروا في العربية التلميحات التاريخية في
الآيات الآتية: —

(١)
ورثنا مجد علقمة بن سيف
اباح لنا حصون المجد دينا
ورثت مهلا و الخير منه
زهيرا نعم دخر الداخينا

وعذابا وكليهما
 بهم فلما قرا الاكرمينا
 و ذا البرة الذي حدثت عنه
 به يحيى ونحى الملنجينا
 و منا قبله الساعي كليب
 فاي المجد الاقد ولينا
 متى تعقد قريفتنا بعيل
 تجد الحبل اوتقص القرينا
 و نوجد نحن امفهم ذمارا
 و ارفاهم اذا عقدوا اليميننا
 و نحن عداة اوقد في خراز
 رقدنا فوق رقد الرافديننا
 و نحن الحابسون بذى اراط
 تسف العجلة الخور الدرينا
 و كنا الايمنين اذا التقينا
 و كان . الايسرين بنوا بيننا
 ثم حجوا اعني ابن ام قطام
 و له فارسية خضراء
 اسد فى اللقاء ورد هموس
 و ربيع ان شمريت غبراء
 و فكفنا غل امرى القيس عنه
 بعد ما طال حبسه والعناء
 و مع الجون جون آل بني او
 س مفود كانها دفواء
 ما جزعنا تحت العكاجة اذ وا
 و اشلا و اذ تلطي الصلاء

(٢)

و اقدناه رب غسان بالمد
 ذر كرها اذ لا تكال الدماء
 و اتيناهم بتسعة ام
 لاك كرام اسلابهم اغلاء
 ولدنا عمرو بن ام اياس
 من قريب لما اتانا الحباء
 مثلها تخرج الفصيحة للقو
 م فلاة من دونها افلاء

V.

٥ — بينوا فى الانكليزية معاني عشرة من الالفاظ التالية :—
 و اكف - يراع - يلب - فريسة - وبيل - هيام - هموس - نادية -
 سفنجة - وظيف - نمط - نسع - نحض - مدرية - مارن

5

VI.

٧ — شرحوا فى العربية خمسة من الابيات المتتابعة
 مع الخصوصيات النحوية فيها :—

15

(ا) كبر المقاناة البياض بمصفرة
 غذاها نمير الماء غير محلل
 (ب) فظل طهاة اللحم من بين منضج
 صفيف شواء أو قدير معجل
 (ج) ألا أيهذا اللأمي أحضر الوغى
 وان اشهد اللذات هل انت مغلدي
 (د) وكان طوى كشعا على مستكفة
 فلا هو أبداها ولم يتقدم
 (هـ) و كثيرة غرباؤها مجهولة
 ترجي نوافلها و يخشي زامها

(و) و كانما أفص الكلام عشيّة
 بقريب بين المنسمين مصلّم
 (ز) ثم حجرا أعني ابن أم قطام
 آء.

VII.

۷ — ترجموا الى العربية الفصحى : —

23

• “ Then a shield

Foremost of all both large and strong, he made
 With quaint work decking it all o'er ; and round
 He put a splendid rim, gleaming, three-fold ;
 And silver strap thereto. With plates five-fold ;
 The shield itself was laid ; whereon he fashioned
 With cunning skill full many a quaint device.
 Thereon he shaped the Earth, the Heaven, the Sea ;
 Also the unwearied Sun, and Moon at full ;
 And thereon all those heavenly Signs, wherewith
 Encirled is the heaven ;—the Pleiades ;
 The Hyades ; and strong Orion's might ;
 The Bear too, which folk also call the Wain.
 And which turns there, and watches mighty Orion ;
 And alone has no share in baths of Ocean ;
 Thereon he also made two goodly Towns
 Of language gifted men ; in one whereof
 Both marriage-feasts there were, and solemn banquets :
 And brides from forth their chambers were they leading
 Under the shine of torches, through the city ;
 And loud uprose the wedding song. And lads
 Were whirling in the dance ; and 'mongst them flutes
 And harps kept up glad sound ; and there stood women,
 Each at her doorway, looking on with wonder.
 In an assembly too were crowded folk ;
 For there in court a strife in law had risen :
 Two men were quarrelling about a fine
 For a man slaughtered : bragging loud was one,
 Telling the people, how he had ne'er received a mite.
 So both were fain to take the matter's issue
 Before the judge.”—*Homer's Iliad* (translated).

ARABIC.

SECOND PAPER.

Examiner—R. F. Azoo, Esq.

N.B.—Candidates should give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. ترجم الى الانكليزية مقتصرًا على خمسة عشر بيتًا 20
من هذه الابيات، وبين شرح الالفاظ المعلمة بخط
من تحت :-

ضروب وما بين الحسامين ضيق
بصير وما بين الشجاعين مظلم
تباري نجوم القذف في كل ليلة
نجوم له منهم ورد وادهم
يظأن من الإبطال من لا حملته
ومن قصد المران ما لا يقوم
فهن مع السيدان في البر عدن
وهن مع الفيثان في البحر عوم
وهن مع الغزلان في الواد كمن
وهن مع العقبان في النيق حوم
إذا جلب الناس الوشيج فانه
بهن وفي لباتهن يحطم
بغرتة في العرب والسلم والحصى
وبذل اللهي والحمد والمجد معلم
يقـر له بالفضل من لا يوده
ويقضي له بالسعد من لا يفهم

اجار على الايام حتى ظففته
تطالبه بالرد عاد وجهرهم
 ضللا لهذي الريح ماذا تريد
 وهديا لهذا السيل ماذا يؤمم
 الم يسال الوبل الذي رام ثفينا
 فيخبرة علك الحديد المثل
 ولما قلقاك السحاب بصوبه
 تلقاه اعلى مفه كعباً واكرم
 فباشر وجهها طالما باشر القفا
 وبل ثيابا طالما بلها الدم
 قلاك وبعض الغيث يتبع بعضه
 من الشام يتلو العاذق المتعلم
 فزار التي زارت بك الخيل قبرها
 وجشمه الشوق الفهي يتجشم
 ولما عرضت الجيش كان بهاءة
 على الفارس المرخي الذؤابة منهم
 حواليه بحر للتجانيف مائج
 يسير به طود من الخيل ايهم
 تساورت به الاقطار حتى كانه
 يجمع اشتات البلاد وينظم
 وكل فتى للحرب فوق جبينه
 من الضرب سطر بالاسفة معجم
 يمد يديه في المفاضة ضيغم
 وعينيه من تحت التركة ارقم

2.

فسر الابيات الآتية بالعربية الساذجة :—

اورده منه بكالشوذانق
بمطلق اليمنى طويل الغائق
عبل الشوى مقارب المرافق
رخو اللبان دائه الطرائق
ذبي منخر رحب واطل لاحق
محجل نهد كميـت زاهق
شادخة غرقه كالشارق
كانها من لونه في باق
باق على البوغاء والشقائق
والابردين والهجير الماحق
للفارس الراكض منه الوائق
خوف الجبان في فؤاد العاشق
كانه في ريد طود شاهق
يشأى الى المسمع صوت الفاطق
لو سابق الشمس من المشارق
جاء الى الغرب مجيئ السابق
يترك في حجارة الابارق
اثار قلع الحلي في المناطق
مشيا وان يعد فكالخنادق
لو اوردت غب سحاب صادق
لاحسبت خوامس ، الايانق

3. انتقد هذين المراثيتين مبينا ما اتفق فيه الشاعران وما اختلفا وذاكرا الغاضل من المفضل :-

قال ابو تمام في رثاء ولدين مغيرين

مجد تأوب طارقا حتى اذا

قلنا اقام الدهر اصبح راحلا

نجمان شاء الله ان لا يطلعا

الا ارتداد الطرف حتى يافلا

ان العجيبة بالرياض نواضرا

لاجل منها بالرياض ذوابلا

لهفي على تلك الشواهد فيهما

لو امهلت حتى تكون شمائل

لغدا سكونهما حجبى وصباهما

حلما وتلك الاربعية نائل

ان الهلال اذا رايت نموة

ايقفت ان سيكون بدرا كاملا

قل للامير وان لقيت موقرا

منه يريب الحادثات حلالا

ان ترز في طرفي نهار واحد

رؤين هاجبا لوعة وبلا

فالثقل ليس مضاعفا لمطية

الا اذا ما كان وهما بازلا

لا غرو ان فننان من عيدانة

لقيام حماما للبرية آكلا

ان الاشياء اذا اصاب مشذب

منه اتمهل ذرى واث اسافلا

شمخت خلالك ان يوسيك امرؤ
 او ان تذكر ناسيا او غافلا
 الا مواعظ قادهالك سمحة
 اسجاح ليلك سامعا او قائلا
 هل تكلف الايدي بهز مهند
 الا اذا كان الحسام الفاصلا

وقال ابو الطيب في مرثية طفل صغير

فان تلك في قبر فانك في العشا
 وان تلك طفلا فالاسى ليس بالطفل
 ومثلك لا يبكى على قدر سفة
 ولكن على قدر الفراسة والاصل
 الست من القوم الذي من رماهم
 فداهم ومن قتلاهم مهجة البخل
 بمولودهم صمت اللسان كغيرة
 ولكن في اعطافه منطق الفصل
 تسليمهم علياؤهم عن مصابهم
 ويشغلهم كسب الثناء عن الشغل
 عزاءك سيف الدولة المقتدى به
 فانك نصل والشدائد للنصل
 تخون المنايا عهدة في سليله
 وتنصرة بين الفوارس والرجل
 بنفسه وليد عاد من بعد حملة
 الى بطن ام لا تطرق بالعمل
 بدا وله وعد السعابة بالروى
 وصد وفيها غلة البلد المصل

وقد مدت الخيل العتاق عيونها
الى وقت تبديل الركاب من النعل
وربع له جيش العدو وما مشى
وجاشت له الحرب الضروس وما تغلي

4. ترجم الى الانكليزية نصف هذه الابيات الاول

20

او الآخر:—

اوميض برق بالابـرق لاحا
ام في ربي نجد اري مصباحا
ام تلك ليلي العامرية اسفرت
ليلا فصـورت المساء صباحا
يا راكب الوجناء وقيت الردى
ان جبت حزنا او طويت بطاحا
وسلكت نعمان الاراك نعم الى
واد هناك عهدته فياحا
فبايمن العلمين من شرقيه
عرج وام عرينه الفواحا
واذا وصلت الى ثنيات اللوى
فانشد فؤادا بالابيطم طاحا
واقتر السلام اهيله عني وقل
غامدته لجنابكم ملتاحا
يا ساكني نجد اما من رحمة
لاسير الف لا يريد سراحا
هـلا بعثتم للمشوق تحية
في طي صافية الرياح رواحا
يعبى بها من كان يحسب هجركم
مزحا ويعتقد المزاح مزاحا

يا اهل ودي هل لراحي وصلكم
 طمع فينعم باله استرواحا
 من غيتم عن ناظري لي انة
 ملات نواحي ارض مصر نواحا
 واذا ذكرتكم اميل كانفي
 من طيب ذكرم سقيت الراحا
 واذا دعيت الى تفاسي عهكم
 الفيت احشائي بذاك شعاحا
 سقيا لايام مضت مع جيرة
 كانت ليالينا بهم افراحا
 حيث الحمى وطني وسكان الغضا
 سكتي ووردي الماء فيه مباحا
 واهيله اربي وظل نخيله
 طربي ورملة وادييه مراحا
 واهي على ذاك الزمان وطيبه
 ايام كذت من اللغوب منراحا
 قسما بمكة والمقام ومن اتى الـ
 بيت الحرام ملبيا سياحا
 ما رنعت ريح الصبا شيم الربى
 الا واهدت منكم ارواحا

5.

عرب خمسا من هذه الكلم :—

10

- (1) Custom is the plague of wise men and the idol of fools.
- (2) Death pays all debts.
- (3) Grief divided is made lighter.
- (4) Half the world delights in slander, and the other half in believing it.
- (5) Happy is the nation which has no history.
- (6) Have an eye to the main chance.
- (7) Ill comes upon war's back.
- (8) Ill got, ill spent.
- (9) Liars have short wings.
- (10) Light your lamp before it becomes dark.

ARABIC.

THIRD PAPER.

Examiner—DR. A. AL-MA'MŪN SUHRAWARDY, M.A., LL.D.,
PH.D., BARRISTER-AT-LAW.

The figures in the margin indicate full marks.

1. Translate into English :—

10

هذا الذي تعرف البطحاء وطأته
و البيت يعرفه و الحبل و الحرم
هذا ابن خير عباد الله كلهم
هذا التقي المقي الطاهر العلم
إذا رأته قريش قال قائلها
إلى مكارم هذا ينتهي الكرم
يكاد يمسكه عرفان راحته
ركن العظيم إذا ما جاء يستلم
أي القبائل ليست في رقابهم
لا ولية هذا أوله نعم
بكفه خيزران ريحها عبق
من كف اروع في عرينه شمم
يغضي حياء ويغضي من مهابته
فما يكلم الا حين يتسم

(a) Who is the person referred to in the above verses? Narrate in Arabic the story of their composition. 4

(b) What is the real name of al-Farazdak? Derive the word الفرزدق 2
and state why the poet was so nicknamed.

(c) Comment on the words underlined in the above extract.

2. • Elucidate in English or Arabic :—

فيارب ان اهلك ولم تروها مني
بليلى أمت لا تبر اعطش من قبري

و ان الك عن ليلى سلوت فانما
تسليت عن ياس ولم اسل عن صبر
و ان يك عن ليلى غني وتجلد
فرب غنى نفوس قريب من الفقر

(a) Explain the grammatical peculiarities of the words under- 3
lined.

(b) Explain the allusion in ولم تروها مني 2

3. Translate into English :—

32

A.

اهلكن [اى صروف الدهر و حوادثه] طسماً و بعدة غدي بهم
و ذا جدون و اهل جاش و مارب و حي لقمان و التقنون *

B.

يا راكباً ان الاثيل مظنة
من صبح خامسة و انت موفق
بالغ به ميتاً فان تحية
ما ان تزال به الركائب تخفق
مني اليه و عبدة مسفوحة
جادت لما نكها و اخرى تخفق
فليسمعن الضرر ان ناديته
ان كان يسمع ميت او ينطق
ظلت سيوف بني ابيه تفوشه
لله ارحام هناك تشفق
امحمد و لالت هنو نجبية
من قومها و الفعل فعل معرق
ما كان ضرك لو مفتت وربما
من الفتى و هو المغيظ المعنفق

و الذضر اقرب من اصببت وسيلة
واحقهم ان كان عنق يعنتق

C.

خليلي هيا طال ما قدر قد تما
اجد كما لا تقضيان كراكما
الم تعلمما مالي براند كلها
ولا بخزاق من حبيب سواكما
اصب على قبري كما من مدامة
فالا تنالاها ترر جثاكما
اقيم على قبري كما لست بارحاً
ظوال الليالي او يجيب صدا كما
و ابكيكما حتى الممات و ما الذي
يرد على ذي عولة ان بكاهما
جرى النوم بين اللحم والجلد منكما
كانكما هاتي عمار سقاكما

D.

لقد لامني عند القبور على البكا
رفيقي لتذراف الدموع السوافك
فقال اتبكي كل قبر رائيته
لقبر ثومي بين اللوى فالدكادك
فقلت له ان الشجا يبعث الشجا
فدعني فهذا كله قبر مالك

(a) Write brief notes, historical, philological or grammatical, as the case be, on the words underlined in the above extracts. 6

(b) State briefly in Arabic the stories connected with extracts B, C, and D. 8

(c) Explain the phrase فتى ولا كمالك. 2

4. Translate any two of the following passages into elegant Arabic :— 20

A.

Abdullah-al-Ma'mūn has been deservedly styled the Augustus of the Arabs. He was not ignorant that they are the elect of God, his best and most useful servants, whose lives are devoted to the improvement of their rational faculties, . . . that the teachers of wisdom are the true luminaries and legislators of the world. Ma'mūn was followed by a brilliant succession of princes who continued his work. Under him and his successors, the principal distinguishing feature of the school of Bagdad was a true and strongly marked scientific spirit, which dominated over all its achievements.

B.

Justly has it been said, "In an ill-omened hour the Cross supplanted the Crescent on the towers of Grenada." The shades of the glorious dead, of Averroes and Avenpace, of Waladeh and Ayeshah, sit weeping by the ruined haunts of their people—haunts silent now to the voice of minstrelsy, of chivalry, of learning, and of art,—only echoing at times the mad outcries of religious combatants, at times the fierce sounds of political animosities. Christianity drove the descendants of these Muslim Andalusians into desert, sucked out every element of vitality from beautiful Spain, and made the land a synonym for intellectual and moral desolation.

C.

In unravelling the intricacies of affairs of Government, and especially the knotty mysteries of finance; in examining and determining private differences; in establishing regular payments for his troops, and for his household; in honouring and rewarding men of merit, and men of learning; in conducting his expenditure, exactly between the extremities of parsimony and prodigality; and in knowing intuitively where he must spend freely, and where with moderation—in all these qualifications—he was an incomparable man indeed, and the most extraordinary Prince of his age. In imitation of the ancient Sovereigns of this country, he used to sit in a public hall of audience, two days in the week, where he examined by himself the pretensions of suitors, and unravelled their respective subterfuges; and although he did not pronounce sentence, but after having asked the opinions of the persons proposed to matters of justice and law, yet it was always upon his own judgment.

ARABIC.

[FOURTH PAPER.]

Examiner—HARINATH DE, ESQ., M.A. (Cal. and Cantab.),
M.R.A.S.

N.B.—Vowel points should be given on all written Arabic.

I.

١ — ترجموا الى الانكليزية ثلاثة من الغضب الاتية والحقوا
التفسير حيث كانت محتومة: —

6

(أ) قال يا قوم انا انبئكم بتاويله واميز صحيح القول من
عليه انه ليجوز رفع الوصلين ونصبهما والمغايرة في الاعراب
بينهما وذكركم بحسب اختلاف الاضمار وتقدير المحذوف
في هذا المضمار قال فغط من الجماعة افراط في مماراته
وانخراط الى مباراته فقال اما اذا دعوتكم نزال وقلبتكم للنضال
فما كلمة هي ان شئتم حرف محبوب او اسم لما فيه حرف
المحب واي اسم يتردد بين فرد حازم و جمع ملازم *

(ب) فاتفق ان ذهبوا في بعض الاوقات لاستقراء مزارع
المزداقات فاخذوا من الجواني المنشآت جارية حالكة الشيات
تحسبها جامدة وهي تمر مر السحاب و تنساب في الحباب
كالحباب ثم دعوني الى المرافقة فليبيت بلسان الموافقة فلما
توركنا على المطية الدهماء وبطنا الولية الماشية على الماء
الغينة بها شيخا عليه سحق سربال وسب بال فعافت الجماعة
محضرة وعنفت من احصوه وهمت بابرزة من السفينة لولا
ما ثاب اليها من السكينة *

(ج) فاتي الوالي فاشرا اذنيه وابته ما كنت اسرته اليه فما
راعني الا انسياب صاغينه الي و انثيال حفدته علي يسومني
ايتارة بالدرة اليتيمة على ان اتحكم عليه في القيمة فغشيني

من الغم ما غشي فرعون وجنوده من اليم ولم ازل ادافع عنها
ولا يغني الدفاع واستشفع اليه ولا يجدي الاهتشفاع و كلما
راى مني ادياد الاعتياص واوتياذ المناص تجرم وتضرم
و حرق علي الارم *

(د) اللهم حطني في تربتي وغربتي وغيبتي واوتني
ونجعتي و رجعتي وتصرفي ومنصرفي وتقلبي ومنقلبي
واحفظني في نفسي ونفائسي وعرضي وعرفي وعددي
وعددتي وسكني ومسكني و حولي وحالي ومالي ومآلي
ولا تلحق بي تغييرا ولا تسلط علي مغيرا واجعل لي من
لدنك سلطانا اللهم احرسني بعينك وعونك واخصني
بامنك ومنك وتولني باختيارك و خيرك ولا تكلفني الى
كلاءة غيرك وهب لي عافية غير عافية وارزقني رفاهية غير رفاهية
واكفني مخاهي اللاء والكفني الغواشي الآلاء ولا تظفر بي
اظفار الاعداء انك سميع الدعاء *

II.

Either

٢ — اشرحوا في العربية :—

10

(ا) اعلموا يا مآل الامل وثمال الأرامل اني من هرات القبائل
وسريات العقائل لم يزل اهلي وبعلي يحلون الصدر ويسرون
القلب ويمطون الظهر ويولون اليد فلما اردى الدهر الاعضاد
وفجع بالجوارح الاكباد وانقلب طهرا لبطن نبا الناظر وجفا
الحاجب وذهبت العين وفقدت الراحة وصلد الزند ووهنت
اليمين وبانت المرافق ولم يبق لنا ثنية ولا ناب فمد اغبر
العيش الاخضر وازرر المحبوب الاصفر اسود يومى الابيض
وابيض فودي الاسود حتى روى لي العدو الازرق فحبذا
الموت الاحمر *

(ب) فلما إثبت الجواب واستثبت منه الصواب قال لي
اهلك والليل فشمز الذيل و بادر السيل فقلت اني بدار غربة
وفي ايواني افضل قرينة لا سيما وقد اغدق جفح الظلام و سجع
الرعد في الغمام فقال اغرب عافاك الله الى حيث شئت
ولا تطمع في ان تبيت فقلت ولم ذاك مع خلو ذراك قال
لاني انعمت النظر في التقامك ما حضر حتى لم يبق
ولم تدر فرايتك لا تنظر في مصلحتك ولا تراعي حفظ
صحتك ومن امعن فيما امعنت وتبطن كما تبطن
لم يخلص من كظة مدفنة او هيضة متلغة فدعني بالله كفانا
واخرج عني مادمت معاني فوالذي يعيي ويميت مالک
عندي مهيت *

Or

Retranslate into Arabic rhymo-prose :—

10

“ Son of Man, how fondly thou dost cleave, unto things that deceive,
and how eagerly thou dost cling unto every thing which injury doth bring,
and how thyself thou dost betray to whatsoever may load thee astray,
and how glad thou art and filled with joy when flattering speeches decoy,
and with what toil thou dost seek things that make thee weary and weak,
and how thou keepest thyself quite careless and free from what concerneth thee,
and thou stretchest wide the bow of thy transgression and lo! thou robest
thyself with greed which unto ruin doth lead, and with what suffices thou art not content
but thy heart is bent on what for thee is not meant, and heedless thou art of the adviser's word by threats
undeterred, habitually veering with the wind of passions, and like the blind she-camel
inclined to stumble and every nerve thou dost strain a heritage for thy heirs to gain
and wealth to obtain to make thy wealth grow more and more thou travailest sore
nor rememberest what lieth before, and as thou art intent on thy twin caves
no thought by thee is spent as to whether thy reckoning shall one day be
of use or harm to thee. And thinkest thou here at large to stay and not be counted
with the coming day? Or dreamest thou that Death can take bribes for thy sake
or that distinction by him is drawn between the lion and the fawn? No, by God,
wealth and children shall fail to ward death off; nay, nought shall avail those
that in their graves remain; unless God Almighty were to doign their works to entertain.
And blessed is he who neglecteth not to hear and to retain and to establish his claim
and from lust to refrain and knows that great is the gain of him who eschews
evil and has the thought that man shall have nought save what he has wrought
which to light must one day be brought.”—
Translated from the Assemblies of Hariri.

III.

٣ — ترجموا الى الانجليزية الفصحى : — 10

(أ) تعامي الناصح البر * وتعتاص وتزور

وتنقاد لمن غدر * ومن مان و من نم

وتسعى في هوى النفس * وتحتال على الفلاس

وتفسى ظلمة الرمس * ولا تذكر ما ثم

ولو لاحظك العظ * لما طاح بك اللعظ

ولا كنت اذا الوعظ * جلا الاحزان تغتم

ستذري الدم لا الدمع * اذا عاينت لا جمع

بقي في عرصة الجمع * ولا خال ولا عم

كاني بك تنحط * الى اللحد و تنحط

وقد اسلمك الرهط * الى افيق من سم

(ب) ما بات جار لهم ساغبا * ولا لروع قال حال الجريض

فغيضت منهم صروف الردى * بحار جود لم اخلها تغيض

واودعت منهم بطون الثرى * اسد التعامي واساة المريض

فمحملي بعد المطايا المطا * وموظني بعد اليفاع الحضيض

وافرخي ما قاتلي تشنكي * بومئذ له في كل يوم وميض

اذا دعا القانت في ليلة * مولا فادوة بدمع يغيض

(ج) اريد منكم شواء * وجردقا وعصيدة

فان غلا فرقاق * به توازى الشهيدة

اولم يكن ذا ولا ذا * فشبعة من ثريدة

فبان تعذرن طرا * فعجبة وفهيدة

فاحضروا ما تسنى * ولو شطى من قديده

(د) لله در عصاة * صدق المقال مقاولا

فاقوا الانام فضائلا * مائورة وفواضلا

حاورتهم فوجدت سحبابا لديهم باقلا
وحللت فيهم سائلا * فلقيت جودا سائلا
اقسمت لو كان الكرام * حيا لكانوا وابلا

(٤) انا الذي تعرفه يا حارث
حدث ملوك فكاهة منافث
اهرب ما لا تطرب المثالث
طورا اخو جد وطورا عابث
ما غيرتني بعدك العوادث
ولا التحي عودي خطب كارث
ولا فرى نابي حد فارث
بل مخلصي بكل عهد ضابث
وكل سرح فيه ذئبي عاثث
حتى كاني للانام وارث
سامهم و حامهم و يافث

IV.

١٢ ٣ — ترجموا الى الانكليزية ستة من الاشعار التالية المقتبسة
من اقوال شعراء العرب واستشهدوا عليها بكلام التحريرى :—

(ا) خُذْهَا أَيَا عَبْدَ الْمَلِكِ بِحَقِّهَا

وَأَرْفَعْ يَمِينَكَ بِالْعَصَا فَخَصَّ

(ب) كَأَنَّ قُلُوبَ الطَّيْرِ فِي قَعْرِ عَشَّهَا

نَوَى الْقَسَبِ مُلْقَى عِنْدَ بَعْضِ الْمَادِبِ

(ج) جَرَى طَلْقًا حَتَّى إِذَا قِيلَ قَدْ دَنِي

تَدَارَكَهُ أَعْرَاقُ سَوْءٍ فَبَلَدَا

- (د) يَطْلُ مُعَبَّأً عِنْدَهُ مِنْ فَرَائِسِ
رُفَاتٍ عِظَامٍ أَوْ غَرِيضٍ مُشْرِشٍ
(هـ) فِيهَا ابْنٌ بَعْدَتْهَا يَكَادُ بِذِيئِهِ
وَقَدْ التَّهَارَ إِذَا اسْتَنَارَ الصَّيْحَدُ
(و) وَيَثْرِبُ تَعْلَمُ أَذَا
إِذَا قُحْطَ

- (ز) غَوَادٍ مِنَ الْأَشْرَاطِ وَظَفٍ تَعْلَمُهَا
رَوَائِحُ أَنْوَاءِ التُّرَيَّا الْهَوَاطِلِ
(ح) أَلْمُسْتَعْيِفُ بِعَمَرٍ عِنْدَ كُرَيْتِهِ
كَالْمُسْتَعْيِفِ مِنَ الرَّمْضَاءِ بِالنَّارِ
(ط) جُمَالِيَّةٌ حَرْفٌ سِنَادٌ يَشْلُهَا
وَزَيْفٌ أَرْجُ الْخَطِوْظَمَانُ سَهْوُ

V.

- هـ — بينوا المصطلحات الآتية فى العربية :—
باب جهرون - حاجة نفس يعقوب - ان الغاسق قد وثب
اطعمة اليد واليديين - الفريضة تعول - جهينة
اخبار - ندماني جذيمة - ابن سكرة *

VI.

- ٦ — ترجموا الوصف الآتى للحرب ترجمة لفظية الى
الانكليزية - ثم فسروا مصطلحات العروض المستعملة فيه واذكروا
الشواهد من كلام الحريري على قدر الوسع :—

ولما رأت هذه الاسود تلك الذئاب والكلاب - كانوا كالمؤمنين
وقد رأوا الاحزاب - فبان منهم صحيح الضرب وعليه - وقالوا هذا
ما وعدنا الله ورسوله - فاحاط اولئك بهؤلاء لكثرة الغلبة - واداروا
لقروضهم على هذه البحور الدائرة المجتلبة - وحين صاروا في
خبي هذه الدائرة كالعروض - اشتغلوا بالضرب وتقطيع الدائرة
بالحرب العضوض - فاول ما اضمروا لهم في ذلك الزحف - فطف
الرأس وخبل العقل وقطع الكف - فصلموا بالرمح الطويل
عقلهم - وثلموا بالرشق المديد شكلهم - وبتروا بالعصب البسيط
وافرهم - وشتروا بالسهم السريع كاملهم - فخذروهم وقصموهم -
وخزموهم وشعنموهم وثرمموهم وهنموهم ووقصوهم وعصبوهم -
وعقصوهم وخذلوهم ونقصوهم - فردوا صدورهم على الاعجاز -
وسدوا على حقيقة الخلاص منهم المجاز - فانكشفوا عنهم
وهم ما بين مشطور ومقطوع ومخدوف - ومجزو ومنهوك
وموقوف - ورجع استنبأى المشار اليه وقد اقتضب بحربه
المتدارك حسيقهم - واجتث بضوئه المتقارب المتماسك ثقلهم
وخفيفهم - وتسبيغ سوابغهم بالضرر موفل - وبالتمكن التام
مذيل - وببيت دائرتهم المتفتحة آمن من الخلل - وعروضه
وضربه سالم من الزحاف والعلل *

VII.

٧ — ترجموا الى العربي المسجع :—

25

" Yet this man, black with the vices which we consider as most loathsome, traitor, hypocrite, coward, assassin, was by no means destitute even of those virtues which we generally consider as indicating superior elevation of character. In civil courage, in perseverance, in presence of mind, those barbarous warriors who were foremost in the battle or the breach were far his inferiors. Even the dangers which he avoided with a caution almost pusillanimous never confused his perceptions, never paralysed his inventive faculties, never wrung out one secret from his smooth tongue and his inscrutable brow. Though a dangerous enemy, and a still more dangerous accomplice, he could be a just and beneficent ruler. With so much unfairness in his policy, there was an extraordinary degree of fairness in his intellect. Indif-

ferent to truth in the transactions of life, he was honestly devoted to truth in the researches of speculation. Wanton cruelty was not in his nature. On the contrary, where no political object was at stake, his disposition was soft and humane. The susceptibility of his nerves and the activity of his imagination inclined him to sympathise with the feelings of others, and to delight in the charities and courtesies of social life. Perpetually descending to actions which might seem to mark a mind diseased through all its faculties, he had nevertheless an exquisite sensibility, both for the natural and the moral sublime, for every graceful and every lofty conception."—*Macaulay*.

ARABIC.

FIFTH PAPER.

Examiner—R. F. AZOO, Esq.

N.B.—*Candidates should give their answers in their own words as far as practicable.*

The figures in the margin indicate full marks.

1. 10 اجب عن مسألتين من هذه المسائل الاربعة فحسب :—
 (١) بين لنا بموجز من القول ان العلم والتعليم طبيعيتان في البشر *
- (٢) اذكر لنا اصول العلوم الفلسفية وما يتفرع عنها *
- (٣) اشرح لنا حقيقة علم الكلام وكيفية حدوثه *
- (٤) اورد لنا نبذة عن العلوم العقلية المختصة بالملة الاسلامية *
2. 20 انقل الى اللغة الانكليزية الكلام التابع ووضح معاني العبارات المندرجة في الذيل :—
 فاذا التوحيد هو العجز عن ادراك الاسباب وكيفيات تأثيرها وتفويض ذلك الى خالقها المحيط بها اذ لا فاعل غيره وكلها ترتقي اليه وترجع الى قدرته وعلمنا به انما هو من حيث صدورنا عنه وهذا هو معنى ما نقل عن بعض الصديقين العجز عن الادراك ادراك. ثم ان المعتبر في هذا التوحيد ليس هو الايمان فقط الذي هو تصديق حكيم فان ذلك من حديث

النفس واما الكمال فيه حصول صفة منه تكليف بها النفس
كما ان المطلوب من الاعمال والعبادات ايضا حصول ملكة الطاعة
والانقياد وتفرغ القلب عن شواغل ما سوى المعبود حتى
ينقلب المرید السالك ربانيا . والفرق بين الحال والعلم في
العقائد فرق ما بين القول والاتصاف *

(١) العجز عن الادراك ادراك *

(٢) واما الكمال فيه حصول صفة منه تكليف بها النفس *

(٣) حتى يقلب المرید السالك ربانيا *

(٤) والفرق بين الحال والعلم في العقائد فرق ما بين
القول والاتصاف *

10. 3. ترجم الى الانكليزية احدى القطعتين التابعتين مجيبا عما
يلحقها من الاسئلة :- .

(١) فتشتمل حيفئذ هذه الصنعة على جزء من الفقه وهو
احكام الوراثة من الفروض والعول والاقرار والانكار والوصايا
والقديبر وغير ذلك من مسائلها وعلى جزء من الحساب وهو
تصحيح السهمان باعتماد الحكم الفقهي وهي من اجل
للعلوم وقد يورد اهلها احاديث نبوية تشهد بفضلها مثل الفرائض
ثلث العلم وانها اول ما يرفع من العلوم وغير ذلك وعندي ان
ظواهر تلك الاحاديث كلها انما هي في الفرائض العينية كما
نقدم لا فرائض الوراثة فانها اقل من ان تكون في كميتها ثلث
العلم واما الفرائض العينية فكثيرة *

(١) ما العول عند الفرضيين وما الرد *

(٢) ما المراد من الفرائض العينية *

(٢) (المناظر من فروع الهندسة) وهو علم يتبين به اسباب
الغلط في الادراك البصري بمعرفة كيفية وقوعها بذاء على
ان ادراك البصر يكون بمضروط شعاعي رآه نقطة الباصر

وقاعدته المرئي ثم يقع الغلط كثيرا في رؤية القريب كبيرا
 والبعيد صغيرا وكذا رؤية الاشباح الصغيرة تحت الماء ووراء
 الاجسام الشفافة كبيرة، ورؤية النقط النازلة من المطر خطا
 مستقيما والشفلة دائرة وامثال ذلك . فيتبين في هذا العلم
 اسباب ذلك وكيفياته بألبراهيم الهندسية ويتبين به ايضا
 اختلاف المنظر في القمر باختلاف العروض الذي ينبغي تلييه
 معرفة رؤية الالهة وحصول المسوفات وكثير من امثال هذا *

(١) ماذا يعني صاحب الكتاب باختلاف العروض وهل ذلك
 على شيء من الصحة *

11. 4. انقل ما ياتي الى اللغة الانكليزية : —

ولما تسامع القوم باقباله دب الفشل في تضاعيف احشائهم
 وسرى الوهل في تفاريق اعضائهم واستطار المخوف في
 مزاج دمائهم ولما سقط في ايديهم ورأوا انهم قد ضلوا قالوا
 لَدُنْ لَمْ يَرْحَمْنَا رَبَّنَا وَيَغْفِرْ لَدُنَا لَنَكُونَنَّ مِنَ الْخَاسِرِينَ فابى الله
 الا ان ينتقم منهم بسيف الدولة خيـزاء عن فعلهم الفظيع وخطبهم
 الشنيع وسعيهم المذموم عند الجميع فصبه عليهم صبا عزالى
 الغيث بنوء المرزمين غير انه غيث قطرة عيث وغيم حشوة
 ضيم وسحاب حمله عذاب وَكَذَلِكَ أَخْذُ رَبِّكَ إِذَا أَخَذَ الْقَرْيَ
 وَهِيَ ظَالِمَةٌ اِنَّ اخْذَهُ اَلِيْمٌ شَدِيدٌ وَبَرَزَ غَائِقُ وَبُكَتَوْنَ بِمُلُوحَاهِمَا
 عبد الملك بن نوح وسائر اهل العسكر الى ظاهر مرو مقابلين
 لعسكر الامير سيف الدولة يعلمان جلادة ويسران بلادة ويقدمان
 ظاهر العيون ويحجمان خيفة الحرب الزبون قد ضاقت عليهم
 الارض بما رحبت فجيوب الاقطار عليهم مزرورة وذبول
 الخذلان عليهم مجرورة وبوارح الادبار بجوارح الدمار من كل

أوب وصوب اليهم — محشورة وظل القوم على علم بانهم يدمرون
على الدمار ويتهافون تهافت الغراش في الغار ويقتلون الانصار
بسيوف الانصار كما قال الله تعالى يَخْرِبُونْ بُيُوتَهُمْ بِأَيْدِيهِمْ
وَأَيْدِي الْمُؤْمِنِينَ فَاعْتَبِرُوا يَا أُولِي الْأَبْصَارِ *

5. 6 اجب عن ثفتين من المسائل الثلاث الآتية : —

(١) اشرح معاني هذه الكلمات واذكر اصولها وماخذها : —

سقط في ايديهم - العزالي - الملواح - حرب زبون - بوارح -
جوارح

(٢) ما المراد من فوء المرزمين - اذكر لفا نبذة عما كان
المعرب من العلم بالسماء *

(٣) أعرب : هاهنا عليهم الارض بما رحبت ويقدمان ظاهر
العيون - اذكر ما السبب في تفكير علم من قوله وظل القوم
على علم *

6. 10 أنقل الى الانكليزية مقالتي من المقالات الآتية بك : —

(١) اسلمسك بعبدل مؤاخيلك ما اسلمسك باواخيلك
ماصعبه ما اصعب للحق واذا عن وحل مع اشياعه وظعن فان
تفكرت انكاهة ورشح بالباطل اناوة فتعوض من صعبته
وان عوضت الشسع واصطرف بعبدله وان اعطيت النسع
فصاحب الصدق انفع من الترياق النافع وقربى العود
اضر من السم النافع *

(٢) الكريم اذا ريم على الضيم نبا والسوي متى سيم الخسف
ابى والوزين المحتبي بحمالة الحكم ينفّر نفرة الوحشي
عن الظلم اشفاقا على ظفّره ان يقلم وعلى ظهّره ان يكلم وقلما
عرفت الانفة و الاباء في غير من شرفت منه الاباء ولا خير
فيمن لم يطبل له عرق وذنب الكلب ما به طرق *

(٣) لا تلتفع بما لا تني ان تبتنني واتقنني وتعنني بغرس
 ما لا تجتنني هلم الى استشارة عقلك فتبصر والى استخارة
 ذهنك فتدبر وقل لي اذا شق بصرك واشتد حصرك وعانيت
 الجدد فشغلك عن ددك واوحشك تفريطك فسقط في يدك
 ما يغني حينئذ عنك بديانك وماذا يجدي عليك قنيانك
 وهل يفعلك نخيلك الصنوان وغير الصنوان ام يدفع عنك
 ما يضر ج من طلعتها من القفوان *

10. 7. اجب عن ثلاث من المسائل الآتية :—

(١) ما الاستعارة وما الفرق بينها وبين المجاز المرسل
 وهل يجوز ان تكون الاستعارة علما *
 (٢) ما هي الاستعارة بالكناية وما الفرق بين مراعاة الفظير
 والاستعارة المرشحة *

(٣) ما الفرق بين الكناية والمجاز وبين الاستعارة والكناية *
 (٤) ما التعريض والنورية والاستخدام *
 (٥) بين لنا اخص انواع البديع اللفظي وأت بمثال عن كل
 نوع تذكرا *
 (٦) ما التضمين وما الاقتباس - اذكر لنا شوبحد عن
 كل منهما *

10. 8. اجب عن ثلاث من هذه المسائل :—

(١) ما الفرق بين الزحاف والعلة *
 (٢) اذكر لنا اشهر الجوازات الشعرية *
 (٣) كم هي الابحر السباعية وما هي اوزانها *
 (٤) قطع الابيات الآتية رسم ابحرها :—

يا خليلي اربعا واستخبرا ربعا بعسفان

للفتني عقل يعيش به * حيث قهدي ساقه قدمه

من اصبحت دنياه غايته * كيف يقال الغاية القصوى
قف على دارهم وابكين * بين اطلالها والدمى

9. 14 عرب ما يأتى :—

The religion of the Arabs, as well as of the Indians, consisted in the worship of the sun, the moon, and the fixed stars, a primitive and specious mode of superstition. The bright luminaries of the sky display the visible image of a Deity : their number and distance convey to a philosophic, or even a vulgar, eye, the idea of boundless space : the character of eternity is marked on these solid globes, that seem incapable of corruption or decay : the regularity of their motions may be ascribed to a principle of reason or instinct ; and their real or imaginary influence encourages the vain belief that the earth and its inhabitants are the object of their peculiar care.

ARABIC.

SIXTH PAPER.

Examiner—DR. A. AL-MA'MŪN·SUHRAWARDY, M.A., LL.D.,
PH.D., BARRISTER-AT-LAW.

The figures in the margin indicate full marks.

Write an essay in English on any one of the following subjects :—

1. " The Days of the Arabs " (ايام العرب) 100
2. The life and times of al-Mutanabbi. 100
3. The manners and customs of Pre-Islamic Arabia as modified by the advent of Islam. 100

PERSIAN.

FIRST PAPER.

Examiner—SHAMS-UL-ULAMA AHMAD.

Give answers in your own words as far as possible.

Out of I, II, III and VI choose three questions only.

The figures in the margin indicate full marks.

1. (a) Translate into English, and explain clearly the purport of each bait :— 20

خود را درم خريد رضاي خدای کن
دامان ازين خدای فروشان فرو نشان

هر داستان که آن نه ثغای محمدیست
 داستان کاهنان شمر آن نه داستان
 آنجا که دم کشاد سرافیل دعوتش
 جان باز یافت پیر سراندیپ در زمان
 و آنجا که کونست دولت او کوس لا اله
 آواز قد صدقت برآمد ز لامکان
 آن شاهد لعمروک و شاگرد فاستقم
 مخصوص قم فانذر و مقصود کن فکان
 مه را دو نیم کرده بدست چو آفتاب
 سایه نه برزمین و از ابر سایه بان
 گه با چهار پیر زبان کرده در دهن
 گه با دو طفل در دهن افکنده ریسمان
 حبل الهست معتکفان را دو زلف او
 هم روز عید و هم شب قدر اندرو نهان
 بر بام سدره تا در ادنی فگند رخت
 روح القدس دلپاش و معراج نردبان
 خواهی که پنبه نوبت الصابرين زنی
 تعلیم کن ز چار خلیفه طریق آن
 از صادقین وفا طلب از قانتین ادب
 از متقین حیا و ز مستغفرین بیان
 از جسم بهترین حرکاتی صلوة دای
 وز نفس بهترین سکفاتی صیام دان
 یا رب دل شکسته و دین درست ده
 کانهجا که این دو نیست و بالیست بیکران
 خاقانی از زمان بفضل تو در گریخت
 او را امان ده از خطر آخر الزمان

(b) Point out the allusions in the above extract and elucidate them in Persian.

(c) Give the full reading of *فانظر* and *فاستقم* stating the *شبان نزول* of both.

(d) Who are meant by *مستغفرین* - *مقین* - *قانتین* - *صادقین* and why are they so called?

(e) Quote the saying of the Prophet referred to in the 12th bait.

2. (a) Explain in Persian :—

20

چون شه پیل تن کشد تیغ برای معرکه
 غازی هند را بهند پیل بجای معرکه
 تیغ نیام بفگند چون گه حشر تن کفن
 راست که صور دردمند از سرنای معرکه
 اسب بچار صولجان گوی زمین کدد هبا
 طاق فلک بپا کدد هم به هبای معرکه
 بیشه سنان نیزها ایمن از آتش سنان
 شیرو دلان ز نیزها بیشه فزای معرکه
 قلم تیغها زده موج بفتح باب کین
 زاده ز موج تیغها صاعقه زای معرکه
 تیغ کبود غرق خون صوفی کار آب کن
 زاع سیاه پوش را گفته صدای معرکه
 مغز سران کدوی خشک اشک یلان زرشک تر
 زمین دوئی تیغ چون ملک پخته ابای معرکه
 تخت خاک رزم را جذر اصم شده ظفر
 خنجر شه چو هندوی جذر کشای معرکه
 رایت شه تدر و ش لیک عقاب جمله پر
 پرچم شه غراب گون لیک همای معرکه
 رشته جان دشمنان مهر و پشت کرد و مان
 چون بهم آورد کدد عقد برای معرکه

حلقه تن عدوی او بر سر شرز اجل
 شه چو سماک نیرزه در حلقه ربای معرکه

(b) Scan any one of the above verses according to the standard measure of **فعل** and give the full name of the metre, stating why it is so called.

(c) Who is alluded to by the appellation **غازی هند**? Give in Persian a brief account of him with dates.

(d) What is the opposite of **چندواصم**? Give the literal and idiomatic meanings of both the terms.

3. (a) Explain in Persian, stating the allusions contained 20 therein :—

به بستم حرص را چشم و شکستم از را دندان
 چو میم اندر خط کاتب چو سین در حرف دیوانی
 مشاع آمد میان عیسی و من گلشن وحدت
 بجان آن نیمه بخیریدم هم از عیسی بازانی
 فلک چون آتش دهقان سنان کین کشد بر من
 که بر ملک مسیحم هست مساحی و دهقانی
 مرا شد گلشن عیسی و زین رشک آفتاب آنکه
 سپر فرمود دیلم وار و ژوبیدن کرد ما کانی
 اگر چون عیسی از خورشید سازم خوانچه زرین
 پر طاؤس فردوسی کفد بر خوان مگس رانی
 به هفتاد آب و خاک از دل بشویم گرد ظلمت را
 که هفتادش حجب پیش است بر هفتاد ظلمانی
 دل ایذبا علتی دارد که نصبحی نیست درکش را
 هفتوز آن روزنش بست است و او بیمار بحرانی
 هفتوز اسفندیار من نرفت از هفتخوان بیرون
 هفتوزش در دژ روئین عروسان اند زندانی
 اگر بر بوی یکنوگی گزیرت نیست از یاران
 بیار بد قناعت کن که بی یاریست بی جانی

نه عیسی داشت از یاران کمینه سوزنی در بر
 نه سوزن چشم دجال است یکچشم صفاهانی
 ز جیب موسوی لافی و بس چون امت موسی
 نه اهل تسع آیاتی که مرد سبع الوانی

(b) What is بيع مشاع ? Name the other kinds of بيع if you can.

(c) State the geographical position of دیلم and ماکان.

4. What nouns are there in Persian which cannot form parts of sentences without being joined with others ? Give examples. 5

5. Define بدل and explain its various kinds with examples. 4

6. (a) Translate into English, rendering the meaning of each verse clear :— 20

مقصد اینجاست ندای طلب اینجا شفوند
 بخندینرا ز ^{جرس} صبحدم آوا شفوند
 طرب
 خاک بر سبحة قرا شود از اشک نیاز
 وز دل خاک همان ناله قرا شفوند
 خاک اگر گرید و نالد چه عجب کانش را
 بانگ گریه ز دل صغیر صما شفوند
 گریه آن گریه که از دیده آتش بیفند
 ناله آن ناله که از سیف خارا شفوند
 کوس حاج ست که دیو از فزعش گردد کر
 زو چو کز نای سلیمان دم علقا شفوند
 از پی حرمت کعبه چه عجب کز پس ازین
 بانگ دق الکوس از گنبد خضرا شفوند
 عرشیان بانگ و لله علی الناس زنفند
 پاسخ از خلق سمعنا و اطعنا شفوند
 از سر و پای در آیند سرپای نیاز
 تا تعال از ملک العرش تعالی شفوند

انجم ماهوش آماده حج آمده اند
 تا خواص از همه لیبیک مثلاً شنوند
 نه صحیفه است فلک هفت ده آیه زیرش
 عاشقان اینهمه از سوره سودا شنوند
 نه صحیفه که بیک بزد ده آیت بستند
 تا نه بس دیر چو سی پاره مجزا شنوند
 بسلام آمدگان حرم مصطفوی
 ادخلوها بسلام از حرم آوا شنوند
 موسی استاده و گم کرده ز ^{دهشت} حیرت نعلین
 ارنی گفتنش از بهر تجلا شنوند
 بهر وا یافتن گم شده نعلین کلیم
 و الضحی خواندن خضر از در طاهها شنوند

(b) According to what metre are the above verses composed ? Scan the last bait, showing why the metre is so called.

(c) Comment on the words لیبیک and تعال.

(d) Give the full reading of ادخلوها بسلام, والله على الناس ارنی and translate them into Persian.

7. Copy out the following words with diacritical points and state their meanings and derivations :— 5

مسیحا - سیما - محازا - مسئله - تلقین - تجرید - معما
 مستیقن and تلمیح - مرقع - معبا - تولا - مسیم

8. How many حروف تشبیه (Adverbs of Comparison) are there in Persian ? Form sentences or quote verses to illustrate their uses. 5

9. Sketch briefly in Persian the life of خاقانی with dates. 6

10. Write an essay in Persian on the following verses :— 15

چه آزادند درویشان ز آسیب گرانباری
 چه محتاجند سلطانان باسباب جهانباری
 بدا سلطانیا کورا بود رنج دل آشوبی
 خوشا درویشیا کورا بود گنج تن آسانی

Or,

هرگز بباغ عهد گیاهی وفا نکرد
 هرگز ز شست دهر خدنگی خطا نکرد
 خیاط روزگار بدالای هیچکس
 پیراهنی ندوخت که آخ قبلا نکرد
 آن مهر دیده که دران ششدر افتاد
 رفت حریفش رها نکرد

PERSIAN.

SECOND PAPER.

Examiner—SHAMS-UL-ULAMA MIRZA ASHRAF ALI.

The figures in the margin indicate full marks.

1. Translate into English with annotations where construction or allusion call for them :— 18

پدر آدم اندرین عالم
 هست ازان دم که زاده مریم
 تن که تن شد ز رنگ آدم شد
 جان که جان شد ز بوی آندم شد
 هر کرا آندم است آدم اوست
 و آن کرا نیست نقش عالم اوست
 آدم آندم که از قدر دریافت
 دل خبر یافت سوی جان بشتافت
 که ازین دم خبر چگونه دهی
 گفت هستم ز جام و جامه تهی
 جامه و جام ما تهی زان ست
 کیمن گرانمایه سخت ارزان ست

همه خواهی که باشی او را باش
 بر او سوی خویش هیچ مَباش
 بر پریده ز دام ناسوتی
 د خزیده بدار لاهوتی
 دیده خطبای خطه ملکوت
 همچو عیسی بدیده لاهوت
 آنکه در بند این جهان آویخت
 سود کرد از زلشکروش بگریخت
 کاین جهانفست مایه غم و رنج
 خوانده عقل او را اسرای سپنج
 رهبرت باد بهر صورت و جان
 این جهان عقل و آن جهان ایمان
 خنک آنکس که نقش خویش بشست
 نه کس او را نه او کسی را جست
 خویشتن را یکی مخوان در ده
 کان یکیگی که هیچ ازان یک به
 همچو نقش زیاد بهر پسیج
 سوی خود یکی و آن یک هیچ
 تو یکیگی و لیک هم ز اعداد
 نام داری و بس چو نقش زیاد
 چون در آمد وصال را حاله
 سرد شد گفت و گوی دلاله
 گرچه دلاله مبنی کارست
 گاه خلوت ترا گرانبارست
 زانکه باشد ز روی عقل و نظر
 در هرزیمت بوقت خود سه ظفر

پس تو ای بو الفضول بلغاری
چون درین رود بر پل و غاری

2. (a) Quote the verses of the Quran that refer to the 1st *bait* of the above extract. 2

(b) **لاھوت** and **ناسوت**.—Name the other two **عالم** and give the signification and derivation of all four. 4

(c) Give the primary meaning and derivation of the word **آدم**. 2

3. Explain in Persian one of the following extracts (A or B), 7 clearing the references :—

A.

دھر نے قالب قدیمی را
طبع نے باعث کریمی را
نشود دھر و طبع بے قولش
همچون جان از نهاد بے طولش
این و آن هر دو ناقص و ابتر
و آن و این هر دو ابله و بے بر
ماده اوز کهنه و نو نیست
اوست کز هستها جز او او نیست
به نهایت نه ملک او معروف
به بدایت نه ذات او موصوف
زرق و تلبیس و مخرقه نخورد
سوی توحید و صدق به نگر
دیدۀ عقل بین گزیند حق
دیدۀ رنگ بین نه بیند حق
باطل ست آنچه دیدۀ آراید
حق در اوهم آب و گل ناید
عقل باشد بخاط و وهم محیط
هو دوان لیک بر بساط بسیط

خلق را ذات چون نماید او
 یکدام آئینه در آید او
 جای و جان هر دو پیشکار تواند
 کوتوال و نفس شمار تواند
 چون برون آمدی ز جان و ز جای
 پس به بینی خدای را بخدای

What do the words **خلط و وهم** signify? Explain the terms 3
بسیط and **محیط**

B.

پس چو مطلوب نبود اندر جای
 سوی او کی بود سفرت از پای
 سوی حق شاهراه نفس و نفس
 آئینه دل زدن آمد و بس
 آئینه دل ز رنگ و زنگ نفاق
 نشود روشنی از خلاف و شقاق
 صیقل آئینه یقینی شما
 چیست خالص صفای دین شما
 پیش آن کش بدل شکی نبود
 صورت و آئینه یکی نبود
 گرچه در آئینه بشکل بوی
 آنکه در آئینه بود نه تویی
 دگری تو چو آئینه دگرست
 آئینه از صورت تو بیخبرست
 آئینه و صورت از سفر دورست
 کان پذیرای صورت از نورست
 نور خود ز آفتاب نبردست
 عیب در آئینه ست و در دیدست

تو نه بینی جز از خیال و حواس
چون نه خط و سطح و نقطه شناس
تو درین راه معرفت غلطی
سال و ماه مازده در حدیث بطی
گوید آنکس درین مقام فضول
که تجلی فداند از حلال

What does the term **حلول** signify? Define the two kinds of **حلول** and give examples. 3

4. Narrate in Persian the story of the elephant and the company of blind men, and say in what connection does the author mention the story. 4

5. Elucidate in Persian, clearing the references:— 15

انا الحق کشف اسرار ست مطلق
بجز حق کیست تا گوید انا الحق
همه ذرات عالم همچو منصور
تو خواهی مست گیر و خواجه مخمور
درین تسبیح و تهلیل اند دائم
بدین معنی همی باشند قائم
اگر خواهی که بر تو گردد آسان
وَ اِنْ مِنْ شَيْءٍ رَا يَكْفُرُ فَرُوْا خَوَانَ
چو کردی خویشتن را پند کاری
تو هم حلاج وار این دم بر آری
بر آور پند پندارت از گوش
ندای واحد القهار بنیوش
ندا می آید از حق بر دوامت
چرا گشتی تو موقوف قیامت
در آ در وادی ایمن که ناگاه
درختی گویدت اِنِّیْ اَنَا اللّٰهُ

روا باشد اَنَا اللَّهُ از درختی
 چرا نبود روا از نیک بختی
 هر آنکس را که اندر دل شکی نیست
 یقین داند که هستی جز یکی نیست
 انا نیست بود حق را سزاوار
 که هو غیب ست و غائب وهم و پندار
 جذاب. حضرت حق را دوئی نیست
 دران حضرت من و ما و توئی نیست
 من و ما و تو و او هست یک چیز
 که در وحدت نباشد هیچ تمییز
 هر آنکو خالی از چون و چرا شد
 انا الحق اندرو صوت و صدا شد
 شود با وجه باقی غیر هالک
 یکی گردد سلوک و سیر و سالک
 حلول و اتحاد از غیر خیزد
 ولی وحدت همه از سیر خیزد
 تعین بود کز هستی جدا شد
 نه حق بنده نه بنده با خدا شد
 حلول و اتحاد اینجا محال ست
 که در وحدت دوئی عین ضلال ست
 وجود خلق کثرت در نمود ست
 نه هرچه آن می نماید عین بود ست

6. (a) Quote in full the verses of the Quran mentioned in the above extract and give in Persian the translation thereof. 4

(b) Explain clearly what is meant by حلول و اتحاد. 3

(c) Account for اِیْمَن and give the derivation of the word اِیْمَن. 3

(d) Name the metro of the verses in question 5 and scan any one 2
bait.

7. هرکه دیدی حسام او مسلول 10
 نفی گشایی برو طریق حلول

Give in Persian the purport of the following Arabic note in connection with the above *bait* of the Hadiqall, and discuss on it fully :—

قال صاحب المواقف - رأيت من الصوفية الوجودية
 من ينكرة ويقول لا حلول لا اتحاد اذ كل يشعر بالغيرية -
 ونحن لا نقول به بل نقول ليس في دار الوجود غيره
 ديار - وهذا العذر اشد قبحا وبطانا من ذلك الجرم -
 اذ يستلزم تلك المخالطة التي لا يجترء على القول بها
 عاقل ولا مميّز له ادنى تمييز - والعجب كل العجب
 من صاحب المواقف في هذا الاعتقاد - ولهذا قال
 المولوي المعنوي في المثنوي - * مثنوي *

دیدۀ ظاهر اگر حق بین بدی
 فخر رازی رازدار دین بدی
 پای استدلالیان چوبین بود
 پای چوبین سخت بی تمکین بود

8. (i) سفل نیل آب داد تا سر او 8
 از فشان سفال چاکر او
 (ii) از پی جان آن سر سادات
 اشتر بارکش بداده زکات

State in Persian the stories connected with the above two couplets, illustrating the application of the following traditions to the stories respectively :—

انا ابی الذبیحین and الاسلام یهدم¹ ما کان قبله

9. Translate into Persian :—

The career of Amurath is a memorable proof of how perilously the possession of unlimited power tempts, first to exercise severity for real wrongs,—next to ruthless haste in punishing for imaginary offences,—

and, finally, to the practice of inhuman cruelty on the slightest suspicion or vexation. His slaughters grew more sweeping, but still, for a long time his cruelty was seldom or never awakened out of mere wantonness or caprice. It was against real or suspected state offenders that the Imperial Manslayer exercised his terrible prerogative during the first two years of his actual sovereignty. But by degrees his temper became more moody, and human life became as nothing in his eyes. One of his sayings is preserved by an Italian writer, who asserts that Amurath's favourite book was "The Prince of Machiavelli" which had been translated into Turkish. The Sultan's own maxim is certainly worthy of such inspiration. It is this: "Vengeance never grows decrepit, though she may grow grey."

PERSIAN.

THIRD PAPER.

Examiner—SHAMS-UL-ULAMA AHMAD.

The figures in the margin indicate full marks.

Give answers in your own words as far as practicable.

Out of I, III and VII choose two questions only.

1. (a) Translate into English, adding notes where necessary :—

19

شکسته خامه آزر گسته نامه قسطا
 چه خامه خامه خسرو چه نامه نامه دارا
 گسته دفتر شاپور و خسته خاطر آذر
 شکسته رونق ارزنگ و بسته بازوی مانا
 بسعی خامه ماهر بفرق نامه ظاهر
 فشانده خسرو قاهر چه مایه لولوی لا
 سدید و محکم و ساطع فصیح و واضح و لامع
 بلیغ و روشن و رائع رشیق و ظاهر و پیوا
 جمیل و در خور و لایق رزین و راقب و رائق
 گزین و لایع و بارق جزیل و سخت و غورا
 شگرف و بیغش و کافی سلیس و دلکش و صافی
 پسند و ویژه و وافی بلند و شارق و بیضا

ز نظم گفت شه الحق نماند زینت و رونق
 بگفت همکر و عمیق بشعر خسرو بیضا
 چه نامه قطعۀ و چامه بسعی نامه و آمه
 بطی دفتر و نامه نهفته فکرت والا
 سبطور او همه تابان چو دست موسی عمران
 نقوش او همه رخشان چو صدر صفه سینا
 بآب چشمه حیوان نیاب کوب تابان
 بزرگ گوهر عمان بدوی عقیق سارا
 نه باشد این قدر انور نه مه نه مهر نه اختر
 ندارد اینقدر گوهر نه کان نه گنج نه دریا
 سپاس خامه خسرو مدیح چامه خسرو
 ثنای نامه خسرو ز حد فکرت دانا
 ز دور گنبد گردون ز جور اختر و ژون
 همواره فارغ و مامون وجود حضرت دارا

(b) In praise of whose letter was the above ode composed ?
 Give in Persian an outline of his reign.

(c) Name and explain the figures of speech in the above extract.

(d) Who were همکر شاپور قسطا and عمیق ?

2. Define جمع الکسر (Broken Plurals), and give the principal measures according to which they are formed, with examples. 4

3. (a) Explain in Persian :—

16

ای قهرمان ملک تو دانی که پیش من
 دانشوران چیره زبانند الکفا
 و شعرا دیگران بگزیند بشعر من
 که طبع جاهلی که پلید است و کودنا
 نزل سپهر را چه زیان که پیاز و سیر
 خواهند یهود در عوض سلوی و مفا
 از جو کزین سپس دهم فیض عام تو
 دیواره بار بار و زرو سیم من مفا

نی نی هزار شکر که از کبودی بکرز
 آز و شره نبود مرا رسم و دیدنا
 گنجی مرا ز علم و هنر داده کردگار
 کایمن بود ز کاستن و کید رهزنا
 گنجم درون خانه و من در دمشق دهر
 سرگشته بی سبب چو خداوند رهنما
 لیک آوختا که چه روه اهرن فکـ رتم
 از غم شده است تیره تر از روی اهرنا
 طبعم عقیم گشت و به پنجده رسید سال
 پنجده ساله زن شود آخر ستودنا
 آن به که بد سگال اتو زیر زمین رود
 کش بر تمام روی زمین نیست مامنا
 رفتم کنم بخصم تو نفرین سپهر گفت
 زین مرده در گذر که نیوزد بشیونا
 تا شیر شریزه روی بتابد ز آتـ شـا
 تا مار کرزه سخت به پیچد بچندنا
 خصم ترا ز آتش و آب سفان تو
 در آب چشم و آتش دل باد مسکنا

(b) Describe in Persian the story referred to in the 3rd bait; quote the verses of the Qoran connected thereto and translate them into Persian.

(c) Who was خداوند رهنم? Write in Persian what you know about him.

4. How many حرف استثنا (Prepositions denoting exception) and حرف عطف (Copulative Conjunctions) are there in Persian? Form sentences or quote verses to illustrate their uses.

5. (a) Translate into English, rendering the meaning of each couplet clear:—

18

سرور عالم ابوالقاسم محمد آنکه چرخ
 با وجود او بود چون ذره پیش آفتاب

الذي ردت اليه الشمس و انشق القمر
 كان اميها ولكن عنده ام الكتاب
 والذي في كفه الكفار لما ابصروا
 كلم الحصباء قالوا انه شى عجاب
 رهنمای هر دو عالم 'آنکه در یک چشم زد
 برگذشت از چار حد و هفت خط و شش حجاب
 با شرار قهر او هر هفت دوزخ یک شر
 با سحاب دست او هر هفت دریا یک حباب
 نه سپهر و شش جهات و هفت دوزخ هشت خلد
 با سه مولود و دو عالم چار مام و هفت باب
 در همه عمر از وجود او خطائی سر نزد
 زانکه بود افعال فیکویش سراسر وحی ناب
 با وجود آنکه صادر شد خطا از بو البشر
 گرهمی باور نداری از نبی برخوان فتاب
 وز سلیمان حشمت الله گر خطائی نامدی
 چیست القیفا علی کرسیه ثم انا
 روز و شب از هائف غیب این ندا گردد بلند
 انه من مال عن شرعه فقد نال العقاب
 هر زمان از ساکنان عرش می آید خروش
 من تطرق فی طریقه قد اصاب ما اصاب
 موسی از تیه ضلالت نامدی هرگز برون
 تا ز طور رافتش لبیک نشنیدی جواب
 یوسف او بر رشته مهرش نکردی اعتصام
 یونس از بر درگه قریش نجستی اقتراب
 تا ابد این یک نمی آمد برون از بطن حوت
 تا قیامت این یکی بودی بزدان عذاب

(b) Parse the 2nd and 3rd baits according to Arabic Grammar.

(c) Elucidate in Persian all the allusions contained in the above extract.

6. Define the following rhetorical terms and give examples :—

6

صنعت مزاجت - صنعت مشاکلت - صنعت مراعاة النظر -
صنعت طباق - صنعت ادماج - صنعت ارماد
صنعت تجرید

7. (a) Clear up the meaning of the following verses in Persian :—

19

چون خواست کردگار که گیتی نظام گیرد
دولت فریوم گردد و ملت قیام گیرد
باس شاه ملک ستان را نمود ملهم
تا زین فهد بر ابرش در کف حسام گیرد
آری چو شاه غازی آید بفرکتنازی
شک نی که دین تازی از نو قوام گیرد
آری کند چو حیدر فتح قلاع خیبر
زان ملت پیدمیر نظم تمام گیرد
یکسو ملک بخنجر کشور کشای و صفدر
یکسو بخامه کشور فایم مقام گیرد
آن سطوت مجسم این رحمت مصور
این خصم را بخامه آن یک بخام گیرد
امسال آن خراج ز کرانج و کات خواهد
سال دگر منال ز کنعان و شام گیرد
امسال آن سمند بملک خجند راند
سال دگر بدور مرورا لکام گیرد
اهل هرات و بلخ مرورا رکاب بوسند
خلق عراق و فارس مرانجا لجام گیرد
ای صدر راستان و ولیعهد کائنات
سبقت ز فرو پایه برین نه غیام گیرد

خلق تراست رائحه گل عجب نه كزوي
 خصم جعلی نهاد به نفـرت مشام گيـد
 ماني بافتـابـ كه ازو مه كسوف يابد
 يا آنكه بهر مه ازو نور وام گيـرد
 اين خوي خاص تست كه هر كوز خبث طيفت
 خود را ز كينه با تو آلد الخصاص گيـرد
 عزت دهی و قرب افزائي و مال بخشي
 تا باز نام جويد تا باز كام گيـرد

(b) Narrate in Persian the conquest of the fort of Khyber by Ali.

(c) Give the geographical position of **هرات**, **خجند گنجان**, **كركاني** and **بلخ**.

(d) Scan the last couplet and give the full name of the metre, stating why it is so called.

8. Give the literal meaning of **كرزن** - **فاسق** - **آفسون** - **انكليون** - **قماط** - **سلك** - **خنفسا** - **صبا** - **كيفر** - **سقلاطون مرزغن** - **غت** - **شنك** - **انگام مجنون** and point out to which language does each of them belong.

9. Who first composed verses in Persian and what different accounts are there concerning this? Quote those verses.

10. Quote and scan verses composed in accordance with the following metres and account for the nomenclature of each :—

بكر مضارع مسدس اخرب مكفوف, **بكر مقتضب مثنى**,
مطوي, **بكر متقارب مثنى مقصور**, **بكر منسرح مثنى**,
بكر رمل مسدس مجنون مقطوع and **مطوي مجذور**

11. Translate into Persian :—

16

The destruction of Bagdad requires the pen of a master like Gibbon. The women and children who came out of their houses with the Koran in their hands, imploring quarter, were trampled to death. Delicately nurtured ladies who had never braved the sight of crowds were dragged into the open streets and subjected to the grossest brutalities; the artistic and literary treasures, collected with such labour and industry by sovereign after sovereign, with the remains of the old Persian civilisation, were destroyed in the course of a few hours. For three days the streets ran with blood, and the water of the Tigris was dyed red for miles along its course. The horrors of rapine, slaughter, and outraged humanity lasted for six weeks. The palaces, mosques, and mausolea were destroyed by fire or levelled

to the earth for their golden domes. The patients in the hospitals, and the students and professors in the colleges, were put to the sword. In the mausolea the mortal remains of the shaikhs and pious imams, and in the academies the immortal works of great and learned men were consumed to ashes; books were thrown into the fire, or, where the Tigris was near, buried in its waters. The accumulated treasures of five centuries were thus for ever lost to humanity, and the flower of the nation was completely destroyed.

PERSIAN.

FOURTH PAPER.

Examiner—SHAMS-UL-ULAMA MIRZA ASHRAF ALI.

The figures in the margin indicate full marks.

1. Translate into English :—

20

از حدوث این مصیبت اتفاقی ملالت تمام روی داد - و اقسام
حزن و اندوه پذیرامون خاطر اقدس گشت - افسوس هزار
افسوس که باده این خمخانه درد آلودست و نبات این شکرستان
هلاهل اندود - عالم سراپی ست تشنه فریب و مغزای هت
پرفراز و نشیب - مستی این بزم را در پی خماری ست
و عاقبت این سودا را در سر بخاری . بواسطه بعضی موانع
که آمدن ایلچی و مردم بیگانه باشد نگذاشت که خوب متوجه
شده نعش او را بچشم صورت هم میدیدیم و آن عطفوت
و مهربانیها که مارا باو بود ظاهر می فرمودیم - تا ارباب ظاهر را
حالت عفایت و التفات ما ظاهر می شد : که تا کسیکه
در راه ما باخلاص و عقیدت رفته ما او را چه قدر می خواهیم .
اگرچه بدیده بصیرت این منظور شده خاطر نشان ارباب معنی
شده است - اما چون بعوام کار داریم این گره در دل ماند *

* شعر *

کدام دل که ازین واقعه جگر خون نیست

کدام دیده کزین حادثه دگر گون نیست

این توده خاک گذاشتنی و گذاشتنی ست و این تیره
مغاک پرکردنی و انباشتنی - پیوندها همه بریدنی ست
و خونابها همه کشیدنی. اگرچه همیشه خیال آن مسافرا را
عدم در پیش نظر و حاضرست و بدائع شمائل آن مجاور
عالم قدم بعضور اقدس ظاهر - و از شکستن کالبد خاکی
و پنهان شدن شبح سیمایی معلوم که در نظر دوربین و خرد
حقیقت گزین چه تفاوت خواهد بود - اما نظر بعالم بشریت
که اقتضای ترکیب عناصر و موالیدست از جدائی ظاهری
آن عظیم المثل آثار تالم و تجسس عظیم در شهرستان باطن
راه یافته که عبارت در تعبیر آن حالت کوتاه ست و اشارت
نیز بصدد کوتاهی عذر خواه : لیکن بدیده سرپرست و باصرو
بصیرت مشهود ست که آنچه از کتم عدم بوجود می آید و از ملاء
وجود باز بعدم می رود باراد متکفل نظام کل ست. خموشیدن
به از خروشدن - و آرمیدن به از جوشیدن - درین صورت
بعیراز رضا بقضای آلهی و تسلیم بتقدیر ازلی مسلکی قویم
و منجهی مستقیم نیست *

(a) State whether the following words are Arabic or Persian :—

2

مغاک and کالبد - نبات - سیماب - سیراب

b) Explain سیمایی. Give some other reading for سیمایی.

2

and the literal meaning of شبح.

2. Translate into English :—

15

رابطه خلعت و صفا واسطه محبت و لا یعنی کلام مصافات
پیام موالات النیام [که در مطایر رقیمه کریمه و فکاویم نیمیه
انیقه عالی مرتبت و معالی منقبت - سلطنت و ابهت
پناه رفعت و شوکت دستگاه - فارس مضمار شهامت و ایالت
مرتقی مدارج منصفیت و عدالت - نقاره دودمان عز و علا -

عضاده خاندان مجد و اعتلا - مطرح اشعه بوارق الهی -
 مجلی انوار شوارق آگاهی - مشید ارکان شجاعت و حشمت -
 موسس بنیان بسالت و عظمت - مسند نشین بزم عز
 و اقبال - صدر آرای بارگاه جلال - الفائز من مبایذی الفطرة
 بمعالی الهمم - المختص بمیامن الفوز بجلائل النعم *

* قطعه *

گوهر آرای نگیں و تیغ عبد الله خان
 آنکه تیغش برده از آئینه امید زنگ
 اشتهب اورا بمیدان نهور کار شیر
 ادهم اورا بدریای و غا کام نهنگ

(لا زالت ارکان محبته مشیده بالدوام - و دعائم دولته موسسة
 بحسن انتظام) — منذرج و منذمج بود - و نسبت قرابت
 و محبت سابقه را تاکیدي و تشییدی - و قواعد صداقت
 صمیمی را تمهیدی رفته بود] — بظهور پیوست. مورث
 صفای خاطر و مثمر انجلی باطن و ظاهر شد. مبانی
 یکجہتی و یگانگی استحکام پذیرفت - و قوائم دوستی
 و یکنادلی انتظام گرفت *

(a) Give the derivation and etymological form of the following words, and write them out with vowel signs:—

منهمک - مشید - مضمار - مثمر - مطرح - مطاری - مصافات
 and مضجعل.

3. Explain one of the following two extracts (i or ii):—

(i) چون بدیده انصاف ملاحظه میکند مدارج این مظاهر
 کونی و الهی و معالی این مجامع انفسی و آفاقی را که
 مستہاک در حقیقت حق و فانی در بقای مطلق اند - ظل

محامد کبریای خداوندی - و پرتو صفات علیای ایزدی
میپاید دانست *

3 بالجملة باتفاق اهل ملل و نحل مقرر شده که عمده در (ii)
موجبات شرف رتبت و رفعت منزلت نوع گرامی انسان
(که مثال اقبالش بتوقیع و قیغ فضلناهم علی کنیر ممن خلقت
مرزین ست) گوهر شبچراغ عقل ست که شناخت خداوندی
باو را بسته - و دریافت کارگاه آفرینش باو باز پیوسته *

4. Explain the following phrases :— 3

عروء توفیقات الهی - فئة متسلطه اوباش - سالة الکرام -
دوحه دودمان اجال - نورسان شهرستان آب و گل ابر آذاری *

5. (a) Write out with examples the definitions of حقیقه and مجاز. 3

(b) Explain the following verses and point out the figures (صنعت) they exemplify :— 6

(a) گل از پیروزه گوئی شکل دستی ست
گرفته جام لعل اندر انامل
(b) آتش سیال دیدستی در آب منجمد
گردیده تنی بخواه از ساقیانش ساغری
(c) رخ او لالهستان و سر زلفک او
زنگیان راست ستان خفته بران لالهستان

6. (a) Define استعاره and مجاز مرسل, and state with examples the varieties of the latter. 5

(b) Translate into Persian and explain clearly :— 6

قال السکاکي فی المفتاح - ان قد عرفت اقسام الاستعاره
فاعلم ان الاستعاره لها شروط فی الحسن ان مصادفاتها حسنت
و الاعرت عن الحسن و ربما اکتسبت قبحاً - و تلك الشروط
رعاية جهات حسن التنبيه بين المستعار له و المستعار منه فی
الاستعاره الحقيقية و الاستعاره بالکنایة - و ان لا تشمها

في كلامك من جانب اللفظ رائحة من التشبيه - ولذلك
يشترط في الاستعارة الحقيقية ان يكون التشبيه بين المستعار
له والمستعار منه جليا بنفسه. او معروفا سائرا بين الاقوام -
والا خرجت الاستعارة عن كونها استعارة - ودخلت في باب
التعمية والالغاز - انتهى *

7. Comment on the following verses, noting the **صلائع لفظي** contained in them :—

- (a) ارانا الاله * هلالا انارا 2
- (b) اذا لم يكن منك ذاهبة * فدعه فدولته ذاهبة 2
- (c) اميد لذت عيش از مدار چرخ مدار 1
كه در ديار كرم نيست آدمي ديار
- (d) اى شاه زمين بر آسمان داري تخت 2
سست است عدو تا كمان داري سخت
حملة سبك آري و گران داري لغت
پيري تو بدانش و جوان داري بخت

8. (a) What kind of poetry 'is **معمل** ? Illustrate your answer with 2
examples.

(b) Give the principal rules for solving a **معمل**. 3

(c) In the following verses find out the names intended by way 4
of **تعمية** :—

(Answer any two of the following examples.)

- (a) چشم بكشا زلف بشكن جان من
بهر تسكين دل بر جان من
- (b) آسمان را سر شد و از جان بكاست
مبهم رویش تا قوين زلف خاست
- (c) بنده تركى شدم و زانكه مي پرسيش نام
آنچه اول گفتمت برخوان بتازي والسلام

(d) در خواب شنیدم سحری نام نگار
 شوقی که دلم داشت یکی گشت هزار
 ای یاد توام نژود مهری بر مهر
 دیدار تو باشد که به بینم بیدار

9. Translate into Persian :—

15

Perhaps the strangest of these night marches was this last one. The road led through a country known as the Valley of the Angel of Death, a dreary plain knobbed and seamed all over with ridges and knolls of black rock or grey hardened clay, and the track wound between and among these, and sometimes over them, half in shade, half in light, now giving a far prospect over the rugged contorted region, fantastically scooped and carved and ribbed and buttressed in all directions, and now sinking between low walls of stone or stony earth, the sides of some dry torrents of salt with white incrustations gleaming ghostly in the moonlight. Half the march had been got through, when the Twin Brethren rose, and the Bear was stooping his head to the horizon; a wind arose blowing from the fields of sleep, and a queer sort of bewilderment or glamour, compounded of the vivid moonlight and shadows of the rock-bounded plain, the cool night wind, and a drowsiness defeated by rapid marching, descended upon my spirits and held me in a kind of glory till I stumbled on a salt river crossed by a quaint stone bridge, and saw dark figures start from the shadow of the high bank as I passed by.

PERSIAN.

FIFTH PAPER.

Examiner—LT.-COL. D. C. PHILLOTT, I.A.

The figures in the margin indicate full marks.

N.B.—Candidates should give their answers in their own words as far as practicable.

1. — عبارت ذیل را در فارسی سلیس مروج ترجمه کن : 15

و چون انسان بحلیه اعتدال مزاج و تعدیل قوای جسمانی
 و نفسانی متحلی گردد من حیث البدن و النفس شبیه
 باجرام سماوی باشد چه توسط بین الاعداد بمقرن خلو ازان
 است و بواسطه این تصفیه نفس او متفقدش بصور حوادث

ماضیه و آتیه بر وجه جزوی شود همچون نفوس فلکیه یا بواسطه اطلاع بر عالم مثال که نزد اساطین حکمت بیانی و عیانی ثابت است یا بواسطه انعکاس صور قدسیه از مصباح نفس ناطقه بمشکوه خیال و تمثل او بصورت جسمانی که مقتضای مرئی و طبیعت مرآت باشد چنانچه رای بعضی حکماست و چون ازین مرقبه ترقی نموده نفی ما سوی الله از خاطر بنماید و باقدام همت بر شواهد خطائر قدس بر آید و بمرتبه مشاهده وحدت صرف متحقق گردد و در زمره ملائک مقربین بل در صف اعالی مهیمین باشد و مع ذلک محبوس و مقصور در یک مقام نباشد بلکه هر مقام را که خواهد محط رحل و منزل قصد تواند داشت و ازین جهت است که ائمه سنت و جماعت که مالکان ازمه براعتند اتفاق نموده اند بران که خواص بشر از خواص ملک افضلست * * شعر *

گر آدمی صفتی از ملک گرو بد-ری

که سجده گاه ملک خاک آدمی زاد است

(a) بیان کن "عالم مثال" چیست و حکما و علمای 2.

اسلام چگونه آنرا تعریف می نمایند ؟

(b) ماده لفظ "ناطقه" چه میباشد ؟ در جمله " از

مصباح نفس ناطقه ... " آیا بمعنی اصلی خود استعمال شده یا نه ؟ مواد از "نفس ناطقه" چیست ؟

(c) واحد الفاظ مندرجه ذیل را تحریر نما :-

"اساطین" - "شواهد" - "خطایر" - "اجرام" - "حکم"

در اخلاق جلالی قوای نفس ناطقه انسانی چگونه 3.

بصفت شده ؟ مختصراً بعبارت خود با شعب آن بنویس *

ماده الفاظ مندرجه ذیل چیست و از کدام بابها است 4.

و بیان کن که از هر یک این بابها چه معنی استفهام می شود *

“ توکل ” - “ تعاون ” - “ انقطاع ” - “ تداوم ”
 “ اصطفاء ” - “ استغفار ”

عبارت ذیل را در فارسی رایج شرح ده : — 5.

17

و هر چند لذت شجاعت در بدایت نه نماید چه مبادی
 آن مودیست بخوف هلاک اما بالآخره اذات و منافع آن
 منافع آن مشاهده گردد خواه در دنیا و خواه در آخرت خاصه
 چون بذل نفس او در حمایت دین و تقویت شرع مبین بوده
 باشد چنانچه نص کلام حقایق اعلام بآن باطقت و لَا تَحْسَبَنَّ
 الَّذِينَ قُتِلُوا فِي سَبِيلِ اللَّهِ أَمْوَاتًا بَلْ أَحْيَاءٌ عِنْدَ رَبِّهِمْ يُرْزَقُونَ
 و عاقل داند که تخلف از جنگ موجب ابقای چیزی میکند
 که قابل بقا نیست پس بحقیقت طالب محالست با آنکه
 اگر فرضاً چند روزی مهلت یابد ننگ و عار جبن و بی غیرتی
 و تقریح و توبیخ اقران و معارف مشروب عیش و حیات او را مکدر
 نموداند پس مرگ با فضیلت شجاعت و ذکر جمیل و اجر
 جزیل بر زندگانی با چندین ننگ و عیب مرجم داند *

* ند

• باری چو فسانه می شوی ای بخرد
 افسانه نیک شو نه افسانه بد

و ازینجاست که حضرت یعسوب المسلمین کرم الله وجهه باصحاب
 خود فرموده که ای طالبان نسیان خصلت مرورث شماست از
 رقد غفلت متنبه شوید و تذکر نمائید که اگر شما کشته نشوید
 البته از ضرورت ملوک الموت جان نخواهید برد پس از جنگ

چرا میترسید و ننگ جبن از چه رو بخود روا میدارید بآن
خدائیکه روح پسر ابیطالب درید قدرت اوست که هزار ضرب
شمشیر بر سر خوردن آسانتر از مردن بر فراش است چه مردن
بطریق مردان به از جان سپردن بشیوه زنان است که سرخی
خون گلگونه چهره عاشقانهست *

1 معنی اصلی "یعسوب" چیست و در زبان انگلیسی (a) 6.
آنها چه میگویند *

3 بیان کن ماده این کلمات را و معنی هر ماده را (b)
نیز بگو:—

"تقریع" - "ائمه" - "مصطفی" - "حیات" - "آدم"
4 مراد از یعسوب المسلمین چیست؟ مختصر جالتی (c)
از ایشان بنویس *

18 عبارت ذیل را در زبان انگلیسی ترجمه کن:— 7.
فایده علم اخلاق پاک ساختن نفس است از صفات رفیله
و آراستن آن بملکات حمیله که ازان بتهذیب اخلاق تعبیر
می شود و ثمره تهذیب اخلاق رسیدن بخیر و سعادت ابدیه
است و باید دانست که سعادت مطلق حاصل نمی شود مگر
باینکه صفحه نفس در جمیع اوقات از همه اخلاق ذمیمه معرا
و بتمام اوصاف حسنه محلی باشد و اصلاح بعضی صفات در
بعضی از اوقات اگرچه خالی از ثمر نیست و لیکن موجب
سعادت ابدیه نمیشود همچنانکه صحت بدن و نظام مملکت
نمیباشد مگر بدفع جمیع امراض و اصلاح جمیع طوایف
و اشخاص در تمام اوقات پس سعید مطلق کسی است که
اصلاح جمیع صفات و افعال خود را بروجهی نموده باشد که
ثابت و پایدار باشد از تغییر احوال درانها خللی راه نیابد و از
تبدل ازمان متغیر نشود از شعلهای مصائب و بلایا برقی

بخرمی صبرش نرسد و از سیلاب محفّتها و رزایا رخنه در بنیان شکر گذاریش نشود و خار و خس شبّهات را بدامن اعتقادش دست رس نباشد بد کردن مردمان با او اورا از احسان و نیکوئی با ایشان باز ندارد بالجمله در پایداری و ثبوت اخلاق و قوت نفس و بزرگی ذات و حسن صفات بمرتبه رسد که اگر آنچه به ایوب پیغمبر رسید باو رسد تغیر در احوالش راه نیابد پس داخل خیل معجزات میشود از عالم جسمانیات بالا تر می رود و دست تصرف افلاک بدامن او نرسد و گرد تأثیرات ثوابت و سیاره بر چهره او نه نشیند بلکه بسا باشد که انسان در قوه نفس و تجرد بمرتبه رسد که تصرف در افلاک بلکه در جمیع مادیات کائنات نماید *

صحت و سقم این جمله را بحث نما یعنی نقد کن *

3 (i) دیر باز است که او را دیدم - دیده ام - (a)

دیده بودم *

(ii) یاد شما کرد - یاد شما را کرد - شما را یاد کرد *

چه فرق جزوی میان این دو جمله می باشد شرح ده :- (b)

(i)* دیروز بمن دشمنام داد *

(ii) دیروز بمن دشنام داده است *

18 عبارت ذیل را در فارسی سلیس با محاوره ترجمه کن :- 9.

"Passionate lovers of poetry and music, they* dedicated much of their leisure time to those elegant pursuits. They taught Europe the game of chess; they gave it its taste for works of fiction—romances and novels. In the graver domains of literature they took delight; they had many admirable compositions on such subjects as the instability of human greatness, the consequences of irreligion, the reverses of fortune, the origin, duration, and end of the world. Sometimes, not without surprise, we meet with ideas which we flatter ourselves have originated in our own times. Thus our modern doctrines of evolution and development were taught in their schools."

Throughout the existence of the first Moslem Empire an extensive commerce and industry also flourished. Commerce had at all times

* The Arabs.

been held in honour by the Arabs ; and long before Mohammed, the Koreish tribe annually sent caravans laden with the products of Yemen into Syria. Maritime commerce was already highly developed in Chal-dæa at the time of its conquest by the Arabs, and the latter took full advantage of the prevailing activity. Colonies were established along the coasts of Persia and India, and their traders ventured as far as the China Seas.

PERSIAN.

SIXTH PAPER.

Examiner—LT.-COL. D. C. PHILLOTT, I.A.

The figures in the margin indicate full marks.

Write an essay in English on any one of the following subjects :— 100

- (1) The life and writings of 'Umar-i-Khayyām.
- (2) The effects on Persia of the Arab conquests.
- (3) The similarity or otherwise of the poems of Hafiz and Atash.

HISTORY.

FIRST PAPER.

Examiner—H. M. PERCIVAL, ESQ., M.A.

The figures in the margin indicate full marks.

Only **EIGHT** questions to be attempted, alternatives to be selected as indicated below.

Either,

1. (a) Religious unity and the removal of tribal differences— 12
which of these two contributed earlier to the formation of the English nation ? (b) The causes of the early rise and subsequent collapse of the kingdom of Northumbria.

Or,

2. (a) The importance of the battles of Deorham and Uriconium in the English conquest of Britain. (b) The work of Alfred and Duns-tan in building up the kingdom of Wessex.

Either,

3. Feudalism in England :—the causes (a) of its rise, and (b) of its 12
decay ; (c) wherein its characteristics differed from those of feudalism on the Continent.

Or,

4. The effect of the anti-feudal measures of the Norman and the 12
early Plantagenet kings upon :—(a) the disruptive tendencies of

Feudalism in England ; (b) the authority of the Crown ; (c) the character of the Norman Baronage, and its position among the English People.

Either,

5. The English Church during the first eight hundred years of its existence as to (a) its primitive organization ; (b) its political and administrative powers : (c) its relations with the Papacy ; (d) its relations with ' heresy ' ; (e) its temporalities. 12

Or,

6. The Friars :—(a) their aims and methods of work as distinguished from those of the Monks ; (b) their success in quickening the political energies of the English in the thirteenth century ; (c) the failure of Roger Bacon to give a scientific turn to the intellectual movement of his age.

Either,

7. The masses of the English people :—their condition in (a) the eleventh, and (b) the fourteenth centuries ; (c) under Elizabeth : (d) under the last two Georges. 12

Or,

8. (a) A general view of the condition of England after the Wars of the Roses. (b) A comment on the statement ' The Tudor despotism served to shelter and preserve the elements of liberty through a period of transition.'

Either,

9. (a) The difficulties Elizabeth had to contend against at the outset of her reign. (b) Those aspects of her character and policy that enabled her to meet those difficulties ; and (c) to secure the English throne and the English nation for Protestantism. (d) Can she be said to have laid the foundations of modern England ? 13

Or,

10. (a) The foreign policy of the Stuart kings after the Restoration. (b) The main stages in the career of William of Orange. (c) How the foreign policy of the English government in his reign came to be in harmony with the wishes of the English nation.

Either,

11. The British colonies in America :—(a) their character in the sixteenth century, and a comparison with that of the Spanish colonies then in existence ; (b) their character in the seventeenth century ; their economic growth, political condition and relations with the mother-country in that century ; (c) a comparison of their strength with that of the French colonies before and after the struggle between them in the eighteenth century ; (d) the change in England's colonial policy towards the end of that century. 14

Or,

12. (a) The sources of the strength of the Whig party during the reigns of the first two Georges. (b) The circumstances that favoured the attempt of George III to overthrow the power of the Whig oligarchy and set up a system of personal sovereignty. (c) The ultimate result as it affected the power of the Crown.

Either,

13. Fiscal reform in England from Walpole to Peel.

13

Or,

14. (a) The results of the operation of the Navigation Laws. (b) The results of their reform.

15. (a) Foreign policy of *either* Canning *or* Palmerston. (b) The policy of the Continental Powers against which it was directed. 12

HISTORY.

SECOND PAPER.

Examiner—DR. J. V. RYAN, B.A., LL.D.

The figures in the margin indicate full marks.

N.B.—Candidates must not answer more than TWO questions on the whole paper to which the same marks are assigned, and must also be careful to observe the group restrictions.

GROUP A.

(Not more than THREE questions to be answered).

1. Write short notes on (a) Benevolences, (b) Ship-money. 9
2. Give a short account of the Star Chamber and its abolition. 8
3. What were the principal constitutional enactments of the Bill of Rights? 8
4. What constitutional points were involved in the cases against the following persons :—(a) Danby, (b) Ferrers; (c) Floyd, (d) Skinner, (e) Mompesson, (f) Fitzharris? 12
5. Write a short account of the establishment of the principle of complete control by the Commons over money-bills. 10

GROUP B.

(Not more than FOUR questions to be answered).

6. Give a short account of the changes effected by the Reform Act of 1832, and of the circumstances under which it was passed. 12
7. Give a brief account of the more important stages in the 'Freedom of the Press' agitation. 11
8. Give a short account of the contest between the House of Commons and the Press, and its effect. 11
9. Give a short account of the reform of the penal law in England. 10
10. Give a short account of the circumstances which led to the revolt of the American Colonies. 9
11. Give a short account of the political emancipation of Roman Catholics and Jews. 8

GROUP C.

(Not more than THREE questions to be answered).

12. Explain—' frank pledge,' ' wergild,' ' bocland,' ' trinoda necessitas,' ' hundred,' ' witenagemot,' ' sac and soc,' ' escheat,' ' court leet,' ' compurgation.' 12

13. Write a note on the Norman conception of sovereignty. 8
 14. Write a short note on the origin and historical development of the jury system. 11
 15. What were the constitutional matters in dispute between Church and the King in the time of Becket? 9
 16. Write an account of the reforms in the judicial system instituted by Henry II. 10

HISTORY.

THIRD PAPER.

Examiner—BABU BIPINBIHARI SEN, M.A.

The figures in the margin indicate full marks.

Only EIGHT questions to be attempted, and to be selected as indicated below.

A.

11 each

Two questions only.

1. (a) Explain the nature of Hyder Ali's grievances against the English; (b) indicate the motives which induced the leading states in Southern India to join him in his attempt to overthrow the English power; (c) sketch the plan of Hyder's operations; and (d) describe the steps taken by Warren Hastings to restore the prestige of the English.
2. (a) Explain clearly the nature of the authority exercised by Mahadjoë Scindia in Hindusthan from 1785 to 1792. (b) Account for his failure to raise his influence at the Court of Poona to a level with the power he established in Hindusthan. (c) Give an estimate of his policy, and indicate his place in the history of India in the last quarter of the eighteenth century.
3. (a) Draw a short character sketch of Mahomed Roza Khan. (b) Why does Choham Hossein prefer the rule of the Mogul Emperor over Bengal to that of the English of his times? (c) What remedies does he suggest for the evils of foreign rule?
4. 'The law of self-preservation supersedes that of justice' (Mill). How far does this admission invalidate Mill's strictures on Hastings' treatment of Cheyt Singh, and the Nawab and Begums of Oudh?

B.

14 each

THREE questions only.

5. Give the substance of Burke's criticism of the arbitrary methods of government which, as he alleges, Hastings employed in the administration of the East India Company's possessions in India.
6. Give summaries, from the published State Papers relating to Bengal, of (a) its Financial and Revenue Systems, the latter both as it stood originally and as it was remodelled by Hastings; the state of the Finances and the average Revenue, in round numbers, during his administration; (b) the powers of the Supreme Court and its relations with the Supreme Council on the question of jurisdiction; (c) the administration of Nizamat affairs; (d) the 'country' government and the position of the zemindars;

(e) Commerce, with special reference to the Investment, Monopolies, and Factories.

7. State Burke's views regarding Bengal as to.—(a) the different classes of the population; (b) the Company's directions as to the method by which the interests of these classes should be promoted, and their enumeration of the abuses that had led to the neglect of these interests; (c) Hastings' disregard of those directions and his method of dealing with these interests; (d) the resulting state of that country as Lord Cornwallis found it.

8. Give specific instances of the criticism of Hastings' action by the hostile majority of the Supreme Council Board.

C.

THREE questions only.

12 each

9. 'The Mogul dominion, in the best times and under the wisest princes, was a government of discretion' (Shore). Criticise the statement; and show how the East India Company initiated the rule of law and equity by organizing a system of administration of justice from the abolition of the Dual Government of Bengal to 1793. Give the substance of Mill's criticism of the judicial reforms of Lord Cornwallis.

10. (a) Give Sir John Shore's reasons against a settlement of revenues directly with the cultivators or with the farmers. (b) Indicate the main points, in connexion with the Revenue Settlement of Bengal on which there was a difference of opinion between Sir J. Shore and Lord Cornwallis. (c) Give a summary of the observations of the Governor-General on the expediency and necessity of a settlement in perpetuity of the land revenues in Bengal, through the zemindar, on economic grounds, as well as on grounds of justice and policy.

11. (a) Describe, after Grant, the status of the zemindar in Bengal before the Permanent Settlement. (b) On what grounds does Shore admit property in the soil to be vested in the zemindar? (c) How did the Settlement of Lord Cornwallis affect the interests of the zemindar, the ryot and the ruling power, respectively?

12. (a) On what grounds does Grant support the view that 'the actual system of revenue in Bengal was from the beginning taken upon mistaken grounds, and the country was under-rated'? (b) Give the substance of the arguments advanced by Shore to prove the inadvisability of enhancing the assessment in view of a permanent settlement with the zemindar.

HISTORY.

FOURTH PAPER.

Examiner—DR. J. V. RYAN, B.A., LL.D.

The figures in the margin indicate full marks.

GROUP A.

Not more than THREE questions to be answered.

1. Describe the manner in which the executive business of the Governor-General in Council is transacted. How does the system

differ from that in force during the régime of the East India Company ? By whom was the change effected ?

2. Give a short sketch of the administrative system in India from the date of the Regulating Act up to the present date. 11

3. Describe the constitution of the council of the Secretary of State for India. Contrast its functions with those of the Board of Directors under the East India Company. To what extent is the Secretary of State independent of his council ? 11

4. What are the chief sources of public revenue in India in order of importance ? How is control of the finances apportioned between the Supreme and Provincial Governments ? 11

5. Give a short account of the reforms which have taken place in the administration of the salt revenue. 11

GROUP B.

Not more than THREE questions to be answered.

6. What are the general characteristics of all states ? What are the chief points of contrast between the ancient and modern state ? 11½

7. What, according to Bluntschli, is the true function of the State, and what, according to him, are the limitations on State interference ? 11½

8. What are the general characteristics of constitutional monarchy ? To what cause was its rise in Europe first due ? Give a short sketch of its origin and development in either England, or France, or Germany, and mention any points of contrast between the English and Continental systems. 11½

9. 'The highest conception of the State is humanity organized.' Elaborate and criticise this. What attempts have been made to attain this ideal in the past, and what are the modern indications which lead us to infer that there is a tendency towards its realization ? 11½

10. What is the conception of the State according to (a) Machiavelli, (b) Bodin, (c) Grotius, (d) Rousseau, (e) Kant ? 11½

GROUP C.

Not more than FOUR questions to be answered.

11. Define International Law. Criticise the propriety of the term 'law' as applied to the rules therein embodied. Contrast International Law and Municipal Law. What are the chief sources of International Law ? 8

12. What is the Monroe Doctrine ? Describe the political circumstances under which it was formulated, and mention any development or modification in the doctrine which has since taken place. 8

13. To what extent are vessels of war exempt from local jurisdiction in foreign ports ? Does the exemption extend to (a) merchant vessels, (b) private yachts ? Quote the authority of any decided cases on the subject, and mention any special rules made by particular nations. 8

14. Give an historical account of the Black Sea Question. 8

15. What are the rights of co-riparian States as regards the free navigation of a navigable river ? Illustrate your answer by reference to the great European and American rivers. 8

16. What claims have been put forward by various nations to the exclusive right of property over various portions of the sea ? On what grounds have these claims been based ? Examine the justice of such claims. 8

HISTORY.

FIFTH PAPER.

Examiner—H. M. PERCIVAL, ESQ., M.A.

The figures in the margin indicate full marks.

Only SEVEN questions to be attempted, and to be selected as indicated below.

GROUP A.—ADAM SMITH.

Any two questions.

1. (a) Natural Rent, Natural Wages, Natural Profit. Natural Revenue : what each means. (b) Disturbing factors that interfere with the maintenance of the 'natural' rates for each of the above. 15
2. (a) The Natural Progress of Wealth : what it means. (b) The specific actions of different nations taken in pursuit of a policy whose effect was to subvert the natural operation of the above.
3. (a) The Natural Freedom of Trade : what it means. (b) The specific actions of different nations taken in pursuit of a policy whose object was to frustrate the natural operation of the above.

GROUP B.—MILL.

Any two questions.

4. International Value :—its relation with (a) cost of Production, (b) the international Demand, (c) the rates of Foreign Exchange. 15 each
5. (a) A classification of the economic functions that have been discharged by governments, and an enumeration of the functions falling under each class. (b) The grounds upon which some of these functions, though they have been actually undertaken by government, should have been left to the freedom of private action. (c) The grounds upon which the freedom of private action requires to be limited by government interference.
6. (a) An enumeration of such of Mill's theories as are now looked upon as untenable. (b)—(1) Mill's proofs, and (2) their refutations by later economists, of any two of these theories.

GROUP C.—PIERSON.

Any three questions.

7. (a) 'What creates new Capital ?' The true answer to this question, and an exposure of the fallacy in the answer given by Socialism. (b) Capital, Credit, the Money Market—relations between the three. (c) The rate of Interest—its connexion with (1) metallic money, (2) banking, (3) prices, (4) the exploitation of labour by capital. 13½ each
8. (a) The effect of Expenditure on Wages—namely, a demand for commodities is a demand for labour. (b) The effect of Machinery on Wages in (1) raising wages, (2) causing distress among wage-earners. (c) The relation between Wages and Efficiency of Labour.
9. (a) The regulation of Prices by Cost of Production (1) at 'normal rates' ; (2) under 'the most unfavourable circumstances.'

(b) The general level of Prices as gauged by Index Numbers. (c) Prices in India as effected by the depreciation of Silver.

10. (a) An explanation of the two different theories on each of which it has been claimed that sound practice in Banking should be based. (b) How far these theories are carried out or condemned in practice by the Bank of England in (1) its ordinary operations; (2) its action during a crisis. (c) A Single, a Double, and a 'Limping' (*boiteux*) standard: the nature of the monetary legislation of 1893 in India and its success or failure in practically establishing any one of these standards.

HISTORY.

SIXTH PAPER.

ESSAY.

Examiner—BABU BIPINBIHARI SEN, M.A.

The figures in the margin indicate full marks.

Write an Essay on *one* of the following subjects :—

100

(a) Government by an aristocracy: its advantages and drawbacks; and a scheme for the reform of the English House of Lords as a factor in a constitution for the British Empire.

(b) State Intervention in Industry and Economic Freedom, with special reference to India.

(c) Economic aspects of a system of National Education; and the lines on which it may be introduced in this country.

(d) Famines in ancient, mediæval, and modern India, and their remedies.

(e) The place of Historical Studies in a liberal education.

PHILOSOPHY.

FIRST PAPER.

PSYCHOLOGY.

Examiner—BABU BRAJENDRANATH SIL, M.A.

N.B.—Candidates should give their answers in their own words as far as possible.

The questions are regarded as of equal value.

1. Describe the results of experiments with the so-called Nerve-muscle Machine, and formulate a mechanical theory of nerve-action in view of these results.

Or,

Describe the phenomena of aphasia, and point out their bearing on the localisation of cerebral functions, carefully explain the principle of substitution in this connection, and discuss the law of the specific energy of the nerves.

2. Carefully distinguish between extensity and local signs and explain their place in a psychological theory of space. What part do motor presentations play in elaborating presentations of position and spatial magnitude? Criticise the attempt "to get extensity out of succession and co-existence."

Or,

Give an account of the process by which the Field of Touch is constructed, noticing the contributions of sensation-circles, pressure-spots, and motor sensations on the skin. Show how these are combined with specific sensation of the muscular sense, and in this connection explain the feelings of double contact.

3. What view do you take of "the presentation-continuum"? From your standpoint, how would you explain sub-consciousness and the relativity of consciousness? Compare Bain's with Wundt's law of relativity, and discuss the question whether time is discrete or continuous.

Or,

Briefly describe the elements and processes that enter into the construction of the three fields of vision, the retinal, the mono-cular, and the bi-no-cular.

4. Describe the origin and growth of Purposive Action, noticing the contributions, if any, of Spontaneous and Reflex Movement, Instinct, Emotional Expression, Ideo-motor Action, and Selective Attention.

Or,

Notice the separate elements that enter into psychophysical time, and describe one method of measuring each. What is meant by the circuit of consciousness, and how is it determined?

5. "The particular tone belonging to any sensation is to a large extent dependent on its intensity." Formulate the laws of this dependence. How does Ward seek to explain them? Apply the principle of this explanation to the feelings of harmony and rhythm.

Or,

Give a psychological analysis of the conceptions of unity, difference, likeness and identity, and point out the part they play as formal categories in the synthesis of Thought.

6. Explain from the standpoint of biological evolution the genesis of Instinct, Memory, Emotion, Reason and Will. Point out in what respects a merely biological account falls short of the requirements of a scientific psychology.

Or,

Criticise each of the following doctrines from the psychological point of view—Idealism, Hypothetical Realism, Positive Realism. Test the validity of each by an appeal to the criterion of Truth, as you conceive it.

7. Classify and analyse the relations that subsist among states of consciousness. "All relations among the changes in consciousness must themselves be other changes." Criticise this statement of Herbert Spencer from the psychological as distinguished from the epistemological point of

Or,

Compare and contrast Quantitative with Qualitative Reasoning, and formulate the law of Reasoning in general. Point out carefully the parallelism between a syllogism and a proportion.

8. Analyse and explain the first three of the following, and any three of the remaining six :—

- (i) Hercules' choice (of Virtue against Pleasure).
- (ii) The sense of constraint, when we do wrong, in violation of our own nature.
- (iii) Your own intellectual type or temperament.
- (iv) The sensation of looking over a precipice.
- (v) The time-sense in dreams and reveries.
- (vi) The pleasure derived from a Tragedy.
- (vii) The idea of an imaginary quantity like -1.
- (viii) Your power of visualisation.
- (ix) Nor shall she fail to see
Even in the motion of the storm
Grace that shall mould the maiden's form
By silent sympathy.

PHILOSOPHY.

SECOND PAPER.

LOGIC.

Examiner—DR. P. K. RAY, D.Sc.

N.B.—Candidates should give their answers in their own words as far as possible.

Only FIVE questions to be answered from Group A and only TWO from Group B.

GROUP A.

1. Explain and criticise Mill's distinction of intuitional and inferential truths.

Distinguish the elements of intuition and those of inference in the following observation :—

- (a) I see a man there.
- (b) That is a beautiful picture.

2. Fully explain and criticise the view of Logic indicated in the following statements :—

"Logic then as here conceived is neither a purely objective nor a purely subjective science."

"A system of comprehensive Logic must postulate, must in fact take as its basis a fundamental quality."

Compare this view of Logic with those of Mill and Spencer.

3. Give a critical account of the existential interpretation of propositions; and in the connexion explain and illustrate the two types of existential propositions.

4. Distinguish the Deductive and Hypothetical Methods and describe the place and use of each in Inductive Logic.

5. State and examine Dr. Venn's view of the origin and nature of our belief in the Uniformity of Nature.

6. Explain and criticise :—

"But the principal fault is that instead of employing the methods of induction to ascertain the general law of causation, he (Mill) put the cart before the horse, and used the law of Causation to support the method."

7. State as accurately as you can the conditions upon which the validity of the application of the Method of Difference depends, and explain as clearly as you can its function in the establishment of a law of causation. Give illustrations.

GROUP B.

8. In the preface to the first edition of the "Critique of Pure Reason," Kant says :—

"My question is, what we can hope to achieve with reason, when all the material and assistance of experience is taken away."

State as clearly as you can the answer given by Kant to this question. What, in your opinion, is the value of the answer at the present time?

9. Explain and examine Kant's deduction of the analogies of experience from the general principles as given in the first edition of the "Critique of Pure Reason."

10. Explain and criticise :—

"A real division of objects into phenomena and noumena, and of the world into sensible and intelligible world is therefore quite inadmissible, although concepts may very well be divided into sensuous and intelligible."

PHILOSOPHY.

THIRD PAPER.

ETHICS AND POLITICAL PHILOSOPHY.

Examiner—BABU BRAJENDRANATH SIL, M.A.

N.B.—Candidates should give their answers in their own words as far as possible.

The questions are regarded as of equal value.

1. Analyse Desire, and define its object in relation to (a) Pleasure; (b) Self-satisfaction. Point out the relation of desire to (a) Reason; (b) Will; (c) Motive. In this connection analyse a typical case of (a) an action against rational judgment; (b) an action against the strongest desire. Accepting self-denial as a fact, point out its bearings on Hedonism.

Or,

Discuss the question of Man's Freedom (a) in relation to Reason or Intelligence; (b) in relation to Will. How is Rational related to Moral Freedom? Explain and criticise Kant's attempt to reconcile phenomenal necessity with nonmenal freedom. How far is the Kantian dualism obviated by Green's conception of self-determination? Accepting self-reform as a fact, discuss its bearings on Determinism.

2. Distinguish between Good and Moral Good. Characterise the

latter in its material as well as formal aspect, and discuss its relation to (a) Perfection ; (b) the pursuit of Art and Science ; (c) the Good Will. Analyse the conception of self-sacrifice, and, in the light of your analysis, discuss the question whether Moral Good is truly non-competitive.

Or,

Characterise the idea of a Common Good, and trace its origin and growth. In this connection, examine the limitations of the biological view of society as an organism. What are the factors involved in the Moral Progress of Humanity ? Describe the different stages in the development of the Moral Ideal in the Race. How do social Institutions help in determining the positive contents of the Ideal ?

3. Discuss the question of the veracity of Consciousness, with special reference to our moral intuitions. Consider critically the claim set up on behalf of each Mental Faculty to be dictator in its own sphere, and examine the postulates and implications of the Moral Faculty. Criticise the fundamental idea of Dr. Martineau's scale of motives, and estimate its ethical importance.

Or,

Analyse the notion of Moral Authority. Examine the claim of (a) Universal Reason ; (b) the Higher Self ; (c) the Social Consensus, to be considered the proper source of this Authority. Does Moral Obligation necessarily imply a dual personal relation ?

4. What different views have been taken of Commonsense in the sphere of Morality ? Discuss the relation between Commonsense and Reason. Explain the relation of Utilitarianism to the morality of Commonsense. Enunciate and prove the principle of Utilitarianism, and point out the function of Reason in this regard.

Or,

Analyse the notion of Justice (a) from the individualistic ; (b) from the Socialistic point of view. Compare Herbert Spencer's formula of Justice with Kant's Universal Principle of Right. Criticise Herbert Spencer's attempt to establish individual property in land consistently with his Law of Equal Freedom.

5. Discuss briefly the practical value for the guidance of conduct, of the following principles and methods of ethics :—Egoistic Hedonism, Utilitarianism, the formula of Evolutionist Ethics, and enunciated by Herbert Spencer, the Ideal of Perfection or Self-realisation, and Commonsense.

6. Examine Aristotle's theory of the state, its origin, its end, and its forms, in the light of Modern History. What, according to Aristotle, is the best ideal Polity, and what the best practicable form of government ? Note after Aristotle the advantages and disadvantages of (a) monarchy ; (b) aristocracy ; (c) oligarchy. Examine Aristotle's view of the democratic form of government.

7. Discuss any six of the following :—

- (i) The ethical justification if any, (a) of war, (b) of slavery.
- (ii) A case of conflict between Conscience and a really noble impulse.
- (iii) A precept of the Code of Honour, e.g., Duelling, which contravenes the moral sense of the individual.
- (iv) The ethics of vivisection as practised on animals.
- (v) Payment according to the market rate, irrespective of any considerations of real worth or value.
- (vi) The limits of (a) toleration, (b) forgiveness, (c) non-resistance.
- (vii) The distinction (a) between 'desired' and 'desirable'; (b) between subjective and objective rightness.
- (viii) Aristotle's view of Phronesis (Prudence) as the cardinal virtue in Politics.

PHILOSOPHY.

FOURTH PAPER.

NATURAL THEOLOGY.

Examiner—DR. P. K. RAY, D.Sc.

N.B.—Candidates should give their answers in their own words as far as possible.

Only SIX questions to be answered.

1. Examine the doctrine of Subjective Idealism in its bearing on the fundamental truths of Religion.
2. "Our primary problem therefore is purely reflective; to find what we mean by Cause and how we gain and mould the dependent ideas." Give a critical exposition of Martineau's solution of the problem.
3. Explain and criticise:—
Experience implies a Duality not a Dualism.
4. Explain and criticise:—
"In the very notion of a spiritual self-conscious being there is already involved what may be called a virtual or potential infinitude."
5. Give a critical account of Caird's exposition of the Ontological argument.
6. Describe the conditions and the occasion of the moral experience which reveals or implies, according to Martineau, an Infinite Objective Perfection.
7. Give a critical account of Martineau's doctrine of the personality of God.

PHILOSOPHY.

FIFTH PAPER.

HISTORY OF PHILOSOPHY.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

N.B.—TEN questions only to be taken up.

1. Give an account of the theory of the Greek Atomists, and compare their views with those of the Indian Atomists, pointing out differences as well as resemblances.
2. Give an account of the ethical conceptions of Socrates, and show on what grounds he opposed the teaching of the Sophists. Explain how Plato in adopting the ethical views of Socrates "gave them a wider significance and a new authority by bringing to light the metaphysical principles implied in them."
3. Indicate the main tendencies of Neoplatonist speculation. Discuss the view, held by some, that this phase of Greek Philosophy shows traces of the influence of Indian thought.

4. Characterise, in contrast, mediæval Scholasticism and Mysticism. Give an account of the Scholastic controversy as to *Universals*.

5. Give an account of Bacon's doctrine of method. Elucidate Ueberweg's remark that 'in Bacon's doctrine of the *idols of the tribe* the fundamental idea of Kant's "Critique of the Reason" is, in a certain measure, anticipated.'

6. 'According to the Cartesian school sensible certainty is founded on divine veracity; according to Berkeley it is, on the contrary, on the veracity of our senses that the existence of God is founded.' Fully explain this statement.

7. 'The philosophical system of Leibnitz is founded on the fundamental belief that the theologico-teleological and the physico-mechanical conceptions of the world should not exclude each other but be in all cases united.' Explain. On what grounds does Leibnitz oppose Spinoza's dictum that 'all determination is negation'?

8. Show how Hume deals with the notions of substance and causality. How do the Commonsense Philosophers meet Hume's arguments?

9. Sketch in outline the reasoning by which Hume undertakes to establish Determinism. What does he mean by maintaining that Determinism is essential to morality? Give an account of Kant's attempt to reconcile natural necessity with human Freedom.

10. 'With the three great German Idealists—Fichte, Schelling, Hegel—Reason, which by Kant had been reduced to the modest rôle of a regulative principle, resumed its supremacy.'

Develop this statement with special reference to the contrast between Kant and Hegel.

11. A modern historian of Philosophy places Schopenhauer's system in the category 'Metaphysics of the Irrational.' Explain. Schopenhauer maintains that his system is closely akin to the teaching of the Upanishads. Examine the validity of this claim.

12. State the distinctive tenets of the great *Bauddha* schools, and point out their analogies to western philosophic thought.

13. Give an account of the views held by the *Chârvâkas*, *Bauddhas*, *Naiyâyikas*, *Sânkhya*s and *Vedântins*, respectively, as to the nature of the *âtman*.

PHILOSOPHY.

SIXTH PAPER.

ESSAY.

Examiner—DR. G. THIBAUT, C.I.E., PH.D., D.Sc.

Write an essay on ONE of the following subjects.

1. Evolution as conceived on the one hand by Hegel and his followers, and on the other hand by modern physical and natural science.

2. The necessity for any ethical theory that aims at thoroughness and consistency to connect itself with a definite metaphysical scheme.

3. Positivism, and the history of its growth in modern thought.

MATHEMATICS (A).

FIRST PAPER.

Examiner—C. LITTLE, ESQ., M.A.*Candidates are not permitted to attempt more than TEN questions.*

1. Given two infinite series, in each of which all the terms are positive and given that the ratio of the corresponding terms in the two series is always finite, prove that the two series are both convergent or both divergent.

Explain how the above theorem may be used in the investigation of the convergency of series, and give an example of the method.

Examine the convergency of the series whose general term is $\frac{1}{an+b}$.

2. If $\frac{p_n}{q_n}$ be the n^{th} convergent of a continued fraction, prove that

$$p_n q_{n-1} - q_n p_{n-1} = (-1)^n.$$

Show how the least positive integral solution of an indeterminate equation of the first degree can be found by means of the above theorem.

Find the general solution of the equation—

$$11x + 7y = 1103.$$

3. Show how to find the sum of the n^{th} powers of the first n natural numbers.

Explain what is meant by Bernoulli's numbers, and show that the above sum may be conveniently expressed by means of them.

Find the sum of the following series :—

$$(1) \quad \frac{1}{1.2.3} + \frac{1}{3.4.5} + \frac{1}{5.6.7} + \dots$$

$$(2) \quad 1 + \frac{1}{m} + \frac{1.2}{m(m+1)} + \frac{1.2.3}{m(m+1)(m+2)} + \dots$$

4. If a is prime to b and the quantities

$$a, 2a, 3a, \dots, (b-1)a$$

are divided by b , prove that the remainders are all different.

If p is a prime, show that

$$\frac{p-2r}{p-1} \cdot \frac{p-1}{p-2} \dots \frac{p-1}{p-1} \text{ is divisible by } p.$$

5. If the probability of the happening of an event in one trial be known, find the probability of its happening once, twice, three times, exactly in n trials.

A purse contains two sovereigns, two shillings and a metal dummy of the same form and size; a person is allowed to draw out one at a time till he draws the dummy; find the value of his expectation.

Also find the probability that he draws a sovereign three times in four trials.

6. Prove that the product of two determinants is a determinant, and show the general form of the product.

If A_1 be the minor of a_1 , B_1 of b_1 etc., in the determinant (a_1, b_1, c_1) prove that

$$(a_1, b_1, c_1) \times (A_1, B_1, C_1) = \{(a_1, b_1, c_1)\}^3.$$

Also state and prove the general theorem.

Find in its simplest form the value of

$$\begin{array}{lll} a^2 + \lambda^2, & ab + c\lambda, & ca - b\lambda \\ ab - c\lambda, & b^2 + \lambda^2, & bc + a\lambda \\ ca + b\lambda, & bc - a\lambda, & c^2 + \lambda^2 \end{array} \quad \begin{array}{lll} \lambda & c & -b \\ -c & \lambda & a \\ b & -a & \lambda \end{array}$$

7. Explain the method of continued approximation as a means of finding the value of a quantity to any desired degree of accuracy.

If $y = x - e \sin x$ where e is small, prove that

$$\tan \frac{y}{2} = \tan \frac{x}{2} \left(1 - e + e^2 \sin^2 \frac{x}{2} \right).$$

8. Find by ordinary trigonometrical methods an expansion for $\sin a$ or $\cos a$ in ascending powers of a , the angle being in circular measure. Show how the series will be modified if a be expressed in degrees. Prove that the series in either case is convergent.

$$\text{If } \theta \cot \theta = a_0 + a_2 \theta^2 + a_4 \theta^4 + \dots$$

show that

$$a_{2n} = \frac{a_{2n-2}}{3} - \frac{a_{2n-4}}{5} \dots + \frac{(-1)^{n-1} a_0}{2n+1} + \frac{(-1)^n}{2n}.$$

9. Prove that

$$\cos n\theta = 2^{n-1} \sin \left(\theta + \frac{\pi}{2n} \right) \sin \left(\theta + \frac{3\pi}{2n} \right) \dots \sin \left(\theta + \frac{2n-1}{2n} \pi \right).$$

Write down the corresponding expression for $\sin n\theta$; and from it prove that

$$n = 2^{n-1} \sin \frac{\pi}{2} \dots \sin \frac{2\pi}{2n} \dots \sin \frac{n-1}{2} \pi.$$

Show that

$$\begin{aligned} 2^{n-1} \sin \theta \sin \left(\theta + \frac{2\pi}{n} \right) \sin \left(\theta + \frac{4\pi}{n} \right) \dots \sin \left(\theta + \frac{2n-2}{n} \pi \right) \\ = \cos \frac{n\pi}{2} - \cos n \left(\theta + \frac{\pi}{2} \right). \end{aligned}$$

10. What is meant by hyperbolic functions?

Prove the fundamental relations between them, and show, how from their analogy to trigonometrical functions many theorems can be at once stated. Prove that

$$\cosh 2\theta - \cos 2\theta = 2\theta^2 \left(1 + \frac{2\theta^4}{14\pi^4} \right) \left(1 + \frac{2\theta^4}{24\pi^4} \right) \left(1 + \frac{2\theta^4}{34\pi^4} \right) \dots$$

11. State and prove Napier's analogies.

If $A = a$, prove that

$$\tan \frac{a}{2} = \frac{\tan \frac{b}{2} - \tan \frac{c}{2}}{1 - \tan \frac{b}{2} \tan \frac{c}{2}}$$

State a corresponding theorem connecting the angles of the triangles.

12. Discuss the method of solution of right-angled spherical triangle showing in each case the most suitable formula.

Solve the triangle having given

$$a = 59^\circ 28' 27'', A = 66^\circ 7' 2'', C = 90^\circ.$$

Two results should be given in each case.

[Tables of logarithms will be given if required.]

13. Show how to find the area of a spherical triangle. Express the area in terms of the spherical excess.

The side AB of a spherical triangle ABC is bisected at D . If E_1 and E_2 be the spherical excesses of the triangles ACD and BCD respectively, prove that

$$\sin \frac{1}{2} E_1 \cos \frac{b}{2} = \sin \frac{1}{2} E_2 \cos \frac{1}{2} a.$$

MATHEMATICS (A).

SECOND PAPER.

Examiner---C. LITTLE, ESQ., M.A.

Candidates are not permitted to attempt more than TEN questions.

1. Explain what is meant by the expression "graphic representation of a polynomial."

Discuss the main features of the roots of an equation as indicated by such a representation.

Apply the method to the polynomial

$$x^2 - 7x + 11.$$

2. State and prove Descartes' Rule of Signs; and show how it may be used to discover the existence of imaginary roots.

Find the nature of the roots of the equation

$$x^3 - 12x^2 - 102x + 108 = 0.$$

Apply the graphic method to find approximate roots of the equation.

3. What is meant by symmetric functions of the roots of an equation? Discuss the methods of expressing such functions in terms of the co-efficients of the equation.

Prove that for the equation $x^4 + px^3 + qx^2 + rx + s = 0$ $\Sigma a^3\beta = p^2q - 2q^3 - pr + 4s$.

4. Find the equation whose roots are the squares of the differences of the cubic equation

$$x^3 + qx + r = 0.$$

Hence deduce criteria of the nature of the roots of the algebraical cubic. Apply the method to the equation

$$2x^3 - 15x^2 + 48x - 45 = 0.$$

5. Explain Horner's method of solving numerical equations. Apply it to find a root of the equation in the previous question; or as an alternative find a root of the equation

$$2x^3 - 85x^2 - 85x - 87 = 0.$$

6. Show how symmetrical functions of the roots of an equation may be calculated: and deduce the differential equation

$$\frac{d}{ds} \frac{p_{r+k}}{r} = \frac{1}{r} p_k$$

connecting the sums of the powers of the roots and the co-efficients of the equation.

Prove the equation

$$a_0 \omega \delta \phi (a_1, a_2, \dots, a_n) = D^F (a_0 a_1, \dots, a_n)$$

explaining the notation and indicating the purpose of the theorem.

7. Discuss the family of curves represented by the equation

$$x^2 + y^2 - 2kx + \delta^2 = 0$$

Prove that the radius of a circle, which touches two given circles, bears a constant ratio to the distance of its centre from the radical axis of the given circles.

8. State and prove the principal relations connecting the co-efficients of the general equation of a conic when any transformation of the axes of co-ordinates is made.

Hence find the relations connecting the lengths of conjugate diameters with the lengths of the principal axes.

9. Discuss generally the contact of conics, and show how the radius of the osculating circle at any point of a conic may be found by elementary methods.

Find the co-ordinates of the centre of curvature of a parabola, and the equation of the evolute.

10. Find the co-ordinates of the pole of the line $\lambda\alpha + \mu\beta + \nu\gamma = 0$ with respect to the conic whose equation is

$$ua^2 + b\beta^2 + c\gamma^2 + 2f\beta\gamma + 2g\gamma\alpha + 2ha\alpha\beta = 0$$

From the result deduce the condition that the line is a tangent to the conic.

Express the equation $l\beta\gamma + m\gamma\alpha + na\alpha\beta = 0$ in terms of tangential co-ordinates.

11. Explain the method of reciprocal polars, with examples.

Find the reciprocal with respect to $x^2 + y^2 - k^2 = 0$ of the conic given by the general equation.

12. Find the condition that the line $\lambda x + \mu y + \nu z = 0$ should pass through one of the four points common to the conics $S = 0$ and $S' = 0$, expressing the result in terms of ϕ , Σ and Σ' well-known functions of λ , μ and ν .

Prove that $\phi = 0$ is the condition that the line

$$\lambda x + \mu y + \nu z = 0$$

is cut harmonically by the two conics.

MATHEMATICS (A).

THIRD PAPER.

Examiner—DR. C. E. CULLIS, M.A., PH.D.

Full marks may be obtained by answering any NINE questions.

1. Prove that

$$\phi \left(a_0 + a_1 x + a_2 \frac{x^2}{2!} + a_3 \frac{x^3}{3!} + \dots \right) = e^{x\Delta} \phi(a_0),$$

where Δ stands for the operator

$$a_1 \frac{\delta}{\delta a_1} + a_2 \frac{\delta}{\delta a_2} + \dots$$

Hence calculate the first six terms in the expansion of ee^x in powers of x .

2. Find the radius of curvature at any point of the curve $r=f(t)$, $\theta=F(t)$.

If u and v are line co-ordinates connected with rectangular Cartesian co-ordinates x and y by the relation $ux+vy=1$, and if the equation of a curve is given in the tangential form $\phi(u, v)=0$, prove that the radius of curvature at the point of contact of the tangent (u, v) is

$$\frac{(u^2+v^2)^{\frac{3}{2}} \frac{d^2r}{dn^2}}{\left(\frac{u}{v} \frac{dv}{du} - v\right)^{\frac{1}{2}}}$$

3. Explain the application of undetermined multipliers to the investigation of maximum and minimum values.

Find an equation giving the maximum and minimum values of u , where $u=ax^2+by^2+cz^2$ subject to the two conditions $x^2+y^2+z^2=1$, $lx+my+nz=0$; and show that the maximum value is that one which when substituted in

$$m^2n^2(b-c)^2(u-a)^2+n^2l^2(c-a)^2(u-b)^2+l^2m^2(a-b)^2(u-c)^2$$

makes this expression positive in sign.

4. Explain how the cusps of an algebraic curve can be determined.

Explain the shape of the following curves in the neighbourhood of the origin :—

$$(1) y=x^2+x^{\frac{5}{2}}+x^3;$$

$$(2) y^2-x^2y+x^5=0;$$

$$(3) c(a^2y-x^3)(h^2y-x^3)=x^7.$$

5. If a right line carrying three tracing points A, B, C move in any manner in a plane, returning to its original position after making a complete revolution, show that the areas S_A, S_B, S_C traced out by the points are subject to the relation

$$\frac{S_A}{CA \cdot AB} + \frac{S_B}{AB \cdot BC} + \frac{S_C}{BC \cdot CA} = \pi.$$

Explain the principle of Amsler's planimeter.

6. Prove the following results :—

$$(1) \int_0^{\frac{\pi}{2}} \frac{\sin x}{x} dx = \frac{\pi}{2}$$

$$(2) \int_0^{\frac{\pi}{2}} \frac{\sin x}{x} F(\sin^2 x) dx = \int_0^{\frac{\pi}{2}} F(\sin^2 x) dx;$$

$$(3) \int_0^{\infty} \frac{x^m \cdot 1}{1+x^n} dx = \frac{\pi}{n \sin \frac{m\pi}{n}}, \text{ if } n > m > 0.$$

7. Reduce

$$\iiint \dots x_1^{a_1-1} x_2^{a_2-1} \dots x_n^{a_n-1} f(c_1+x_2+\dots+x_n) dx_1 dx_2 \dots dx_n$$

to a single simple integral, when x_1, x_2, \dots, x_n assume all positive values such that their sum does not exceed a .

A rod of length a is divided at random into n pieces; show that the mean value of the product of the lengths of the pieces is $\frac{(n-1)!}{(2n-1)!} a^n$.

8. Prove that in general for values of x lying between a and b

$$f(x) = \frac{1}{2} \int_{-\infty}^{\infty} \int_a^b f(v) \cos u(x-v) du dv.$$

What are the values of the integral for other values of x ?

9. Integrate the following differential equations:—

$$(1) \quad x^2 \frac{d^2 y}{dx^2} - 9x \frac{dy}{dx} + 25y = x^2 + x^6;$$

$$(2) \quad (1-x^2) \frac{d^2 y}{dx^2} - x \frac{dy}{dx} - 2 = 0;$$

$$(3) \quad (1-x^2) \frac{d^2 y}{dx^2} + x \frac{dy}{dx} - y = x(1-x^2)^{\frac{3}{2}}.$$

10. Find the necessary and sufficient condition that the total differential equation

$$Pdx + Qdy + Rdz$$

may have a single integral of the form $f(x, y, z) = 0$.

Integrate the equation

$$(x^2y - y^3 - y^2z) dx + (xy^2 - x^3 - x^2z) dy + (xy^2 + x^2y) dz = 0.$$

11. Distinguish between a complete, singular, general, and particular integral of a partial differential equation of the form $F(x, y, z, p, q) = 0$.

If a solution of the equation has been obtained in the form $\phi(x, y, z, a, b) = 0$, where a and b are arbitrary constants, show how to derive all the solutions.

Integrate the following equations:—

$$(1) \quad x^2y p + y^3q = x^5;$$

$$(2) \quad z = px + qy + (1 + p^2 + q^2)^{\frac{1}{2}};$$

$$(3) \quad q^2r - 2pqz + p^2t = 0.$$

12. Show how to find y , a function of x , so as to make $\int_{x_0}^{x_1} V dx$ a

maximum or minimum, V being a given function of $x, y, \frac{dy}{dx}, \frac{d^2y}{dx^2}, \dots$.

Explain how the same problem may be solved when y is so restricted

that $\int_{x_0}^{x_1} U dx$ has a given value, U being a function of the same quantities as V .

Determine the form of the plane curve of given length extending from A to B which, together with the straight line AB , will enclose a maximum area.

MATHEMATICS (A).

FOURTH PAPER.

Examiner—DR. C. E. CULLIS, M.A., PH.D.

Full marks may be obtained by answering any NINE questions.

1. Find the perpendicular distance of the point (x_1, y_1, z_1) from the straight line

$$\frac{x-x_0}{l} = \frac{y-y_0}{m} = \frac{z-z_0}{n}.$$

If p is the perpendicular from the origin on the line of intersection of the planes

$$a_1x + b_1y + c_1z + d_1 = 0, \quad a_2x + b_2y + c_2z + d_2 = 0,$$

prove that

$$p^2 = \frac{(ad)^2 + (bd)^2 + (cd)^2}{(bc)^2 + (ca)^2 + (ab)^2},$$

where (ad) stands for $a_1d_2 - a_2d_1$.

2. Define and show how to determine the centre or centres of any quadric surface. When there is a single centre at infinity or a finite line of centres, prove that the equation of the surface can be reduced to the forms

$$ax^2 + by^2 + 2wz = 0, \quad ax^2 + by^2 + d = 0$$

respectively, and show how to determine the co-efficients in the reduced equations.

Show that the equation

$$5y^2 - 2x^2 - z^2 - 4xy - 6yz + 8zx - 20x - 4z + 25 = 0$$

represents a hyperbolic cylinder, and find the equation of the axis of the cylinder.

3. Prove that the squares of the semi-axes of the section of the surface

$$ax^2 + by^2 + cz^2 + 2fyz + 2gzx + 2hxy + 2ux + 2vy + 2wz + d = 0$$

made by the plane $lx + my + nz + p = 0$ are the values of r^2 given by the equation

$$r^4\phi_1^3 + r^2\phi_1\phi[(a+b+c)(l^2+m^2+n^2) - \psi] + (l^2+m^2+n^2)\phi^2 = 0$$

where

$$\phi \equiv \begin{vmatrix} a, & h, & g, & u, & l \\ h, & b, & f, & v, & m \\ g, & f, & c, & w, & n \\ u, & v, & w, & d, & p \\ l, & m, & n, & p, & 0 \end{vmatrix}, \quad \phi_1 \equiv \begin{vmatrix} a, & h, & g, & l \\ h, & b, & f, & m \\ g, & f, & c, & n \\ l, & m, & n, & 0 \end{vmatrix},$$

and $\psi \equiv al^2 + bm^2 + cn^2 + 2fmn + 2gnl + 2hlm$.

4. Prove that the volume of a parallelepiped which has three conjugate semi-diameters of an ellipsoid for conterminous edges, is constant.

If P, Q, R are the extremities of three such semi-diameters, prove that the centre of gravity of the triangle PQR coincides with the centre of the plane section of the ellipsoid through P, Q, R .

5. Find the equations of the generators of the hyperboloid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = 1$$

which pass through the point

$$(a \cos \phi \sec \phi, b \sin \phi \sec \phi, c \tan \phi),$$

showing that $\theta + \phi$ is constant along one generator, and $\theta - \phi$ along the other.

The perpendiculars let fall from a point P on two given non-intersecting straight lines are at right angles; prove that the locus of P is a hyperboloid of one sheet of which the given lines are generators.

6. Show that the elliptic paraboloid

$$\frac{x^2}{a} + \frac{y^2}{b} = 2z,$$

where $a > b$, can be generated by a circle whose centre describes a fixed straight line with uniform velocity u , while its area increases at the uniform rate $2\pi au$, the plane of the circle remaining parallel to itself and making

an angle $\sin^{-1} \sqrt{\frac{b}{a}}$ with the fixed straight line.

7. If two quadric surfaces touch one another at two points, show that they intersect in two plane curves.

Defining the foci of a quadric surface as the point spheres which touch it at two points, prove that the locus of the real foci of the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

consists of two conics.

If a ray proceeds from any point on one of these conics in any direction, and is reflected at the surface, show that after reflexion it will again intersect that conic.

8. Show that the equation

$$yz - xy - xz + a(y + z - x) + b = 0$$

represents a conicoid of revolution, and find the equation of its axis.

9. Establish the differential equation of developable surfaces.

The generators of a developable surface meet each of the parabolas

$$y^2 - 4ax = 0, \quad z = 0; \quad (y - c)^2 - 4bz = 0, \quad x = 0.$$

Find the equations of the surface and of its edge of regression.

10. Show that the latitude u and longitude v of any point of a curve which lies on a sphere of radius a and cuts all meridians at a constant angle α satisfy the equation

$$v \cot \alpha = \log \cot \left(\frac{\pi}{4} - \frac{u}{2} \right) + \lambda$$

where λ is a constant.

Prove that the radius of curvature of the curve at any point is

$$a \cos u (\cos^2 u + \sin^2 \alpha \sin^2 u) - \frac{1}{\lambda}.$$

11. If a curve be traced on a cone and then developed into a plane, show that the points of inflexion on the developed curve correspond to points on the original curve where the tangent planes to the cone cut the osculating planes of the curve at right angles.

12. Find the differential equations of lines of curvature on the surface $z = f(x, y)$.

Show that the line which separates a synclastic from an anticlastic part of a surface is not generally a line of curvature, and that along it the inflexional tangents coincide.

MATHEMATICS (A).

FIFTH PAPER.

Examiner—DR. GANES PRASAD, D.Sc.

You are not permitted to attempt more than NINE questions. The questions are all of equal value, and any NINE carry full marks.

1. Prove that if three forces keep a body in équilibre, their lines of action must be co-planar, and either concurrent or parallel.

A cone of given weight W is placed with its base on an inclined plane, and supported by a weight W' which hangs by a string fastened to the vertex of the cone and passing over a pulley in the inclined plane at the same height as the vertex. Determine the conditions of equilibrium.

2. A wrench (P, K) acting on a rigid body is equivalent to the forces (X, Y, Z) along any three rectangular co-ordinate axes together with the couples (L, M, N) with their axes parallel to these co-ordinate axes; the wrench is also equivalent to the system of n forces

$$P_1, P_2, \dots, P_r, \dots, P_n,$$

such that the shortest distance between the lines of action of any two forces P_r and P_s is d_{rs} , and the angle between them is θ_{rs} . Prove that

$$RK = LX + MY + NZ = \sum \{ \pm P_r \cdot P_s \cdot d_{rs} \sin \theta_{rs} \};$$

and explain carefully the convention necessary to determine the ambiguity in sign in the last expression.

3. Find the centre of gravity of a quadrant of an ellipse. Also establish Guldinus' theorem relating to the volume of a solid of revolution.

An ellipse revolves about any tangent line. If the volume generated by one portion into which the ellipse is divided by its minor axis varies inversely as the volume generated by the other portion, find the eccentricity of the ellipse.

4. A uniform inextensible string, acted on by gravity and by two terminal tensions, rests in contact with a smooth curve in a vertical plane; find the tension at any point, and the pressure on the curve.

If at every point the pressure be inversely proportional to the radius of curvature, prove that the curve must be a catenary.

5. Define the potential of an attracting body.

Find the potential of a uniform thin bar at an external point, and prove that the equipotential surfaces are ellipsoids of revolution having the extremities of the bar as foci.

6. A frame formed of four uniform rods of length l connected by smooth hinges, is hung over two smooth pegs in the same horizontal line at a distance $\frac{l}{\sqrt{2}}$, the two pegs being in contact with different rods; show

that the frame is in equilibrium when each angle is 90° , and determine whether the equilibrium is stable or unstable.

7. The motion of a particle in a plane is referred to polar co-ordinates

r and θ . Find expressions for the components of its velocity and acceleration along and perpendicular to the radius vector.

If the velocity of the particle is equivalent to two equal constant components, one parallel to a fixed straight line, and the other along the radius vector from a fixed point; prove that the particle describes a parabola, and find the law of its acceleration.

8. Establish the fundamental property of the hodograph, and apply it to determine the law of force when the central orbit is a focal ellipse.

A particle moving in an ellipse under the action of a force directed to a focus has a small velocity $2v$ impressed on it in the direction of the focus; find the corresponding changes in the eccentricity, and in the position of the apse line.

9. (1) Prove that the periodic time in which a simple circular pendulum of length l makes finite oscillations of amplitude a on either side of the vertical is T , where

$$T = 2\pi \sqrt{\frac{l}{g}} \left[1 + \left(\frac{1}{2}\right)^2 \sin^2 \frac{a}{2} + \left(\frac{1 \cdot 3}{2 \cdot 4}\right)^2 \sin^4 \frac{a}{2} + \dots \right].$$

(2) Establish the isochronism of the cycloid.

10. Prove that the force in a central orbit is $\frac{h^2}{r^3} \frac{dp}{dr}$.

A particle subject to a force towards a fixed point O , varying inversely as some power of the distance, is projected from a point and describes freely a curve whose curvature varies as the n th power of the distance from O . Prove that the velocity of projection must be due to falling from an infinite distance, and determine the law of force.

11. A particle is constrained to move on a given smooth plane curve under a given conservative system of forces in the plane of the curve. Determine the motion, and the reaction of the constraining curve.

A particle under the action of gravity moves down the inner side of a smooth ellipse whose axis major is vertical. Find the least velocity at the lowest point of the ellipse in order that the particle should make a complete revolution in the curve.

12. A heavy particle is projected vertically upwards in a medium whose resistance varies as the square of the velocity. Prove that the interval that elapses before it returns to the point of projection is less than it would be if there were no resistance. Prove also that, if the particle is

let fall from rest, then in time t it acquires a velocity $U \tanh \frac{gt}{U}$ and falls

a distance $\frac{U^2}{g} \log \left(\cosh \frac{gt}{U} \right)$ where U is the terminal velocity in the medium.

MATHEMATICS (A).

SIXTH PAPER.

Examiner—DR. GANES PRASAD, D.Sc.

You are not permitted to attempt more than NINE questions. The questions are all of equal value, and any NINE carry full marks.

1. Prove that at all points of a fluid in equilibrium

$$dp = \rho (Xdx + Ydy + Zdz).$$

If the components of force be proportional to $x-a$, $-\sqrt{h^2-z^2-(x-a)^2}$, z , h , and a being constants, find a law of variation of density, the corresponding surfaces of constant pressure, and the curves of constant density and constant pressure.

2. Define centre of pressure.

Prove that the centre of pressure of a plane area completely immersed in a heavy homogeneous fluid is the pole of a certain straight line with respect to the momental ellipse at the centre of gravity of the area.

If a square of side $2a$ is completely immersed in a homogeneous liquid in a vertical plane with its centre at depth d , prove that the centre of pressure is vertically below the centre of the square and at distance $\frac{a^2}{3d}$

from it, whatever be the inclination of the sides of the square to the vertical.

3. Define surface of buoyancy.

Prove that all positions in which a given body can float freely in a homogeneous liquid are obtained by drawing normals from the centre of gravity of the body to the surface of buoyancy, and placing the body so that any one of these normals is vertical.

Find the surface of buoyancy in the case of a right circular cone immersed in a homogeneous liquid with its vertex downwards, no part of the base of the cone being submerged.

4. (1) A diving bell of any shape occupies a given position below the surface of water; the bell has a platform inside; if a large block of wood falls from the platform into the water, prove that the water will rise inside the bell, but that the bell now contains less water than before.

- (2) If the pressure of the air varied as the $\left(1 + \frac{1}{m}\right)^h$ power of

the density, show that, neglecting variations of temperature and gravity, the height of the atmosphere would be equal to $(m+1)$ times the height of the homogeneous atmosphere.

5. What is meant by the adiabatic transformation of a perfect gas?

Find the relation existing between the volume and the pressure of the gas during this transformation.

Show that when a given mass of gas expands adiabatically the work done depends only on the difference between the initial and final absolute temperatures; and that the ratio of the initial and final volumes depends only on the ratio of the initial and final absolute temperatures.

6. Find the general equations of motion of a perfect fluid.

A quantity of liquid (gravity being supposed not to act) just fills a hollow sphere, and is repelled from a point in the surface of the sphere by a force $= \mu \times \text{distance}$; if the liquid revolve round the diameter passing

through the centre of force with uniform angular velocity ω , find the whole pressure on the surface of the sphere. If, by diminishing the angular velocity one half, the pressure is also diminished one half, show that $\omega^2 = 6\mu$.

7. Enunciate and prove Newton's Lemna II.

Find the volume of a sphere and the centre of gravity of a hemisphere.

8. Obtain Newton's expression $F = \frac{2h^2}{SY^2 \times PV}$ for the law of force in an orbit about S as centre.

A particle describes an ellipse of centre C about any centre of force S in its own plane. If CS cuts the ellipse in P , and f is the acceleration due to the force at P , show that the periodic time is $\frac{2\pi \times CP^{\frac{3}{2}}}{f^{\frac{1}{2}} \times SP}$.

9. Enunciate and prove Newton's Prop. X.

A body is projected in a direction making an angle $\cos^{-1} \frac{1}{\sqrt{3}}$ with the distance from a point to which a force tends, varying as the distance from it, and the velocity $= \sqrt{\frac{3}{2}} \times$ velocity in the circle at the same distance; prove that one axis is double of the other and that the inclination of the major axis to the distance is $\frac{1}{2} \cos^{-1} \frac{1}{\sqrt{3}}$.

10. Enunciate and prove Newton's Prop. XIV.

If the perihelion distance of a comet's orbit be $\frac{1}{2}$ of the radius of the Earth's orbit, supposed circular, find the number of days the comet will remain within the Earth's orbit.

11. Explain the nature of the collimation, level, and deviation errors of a transit instrument, and calculate their effects on the time of transit.

12. Show how to find the local time at a place, whose latitude is known, by means of an observation of the zenith-distance of a known star.

If there be a small error in the latitude, prove that the best result will be obtained by observing the star when it crosses the prime vertical; but that if the declination of the star be greater than the latitude of the place, the great circles joining the star to the zenith and the pole should cut at right angles.

13. Explain the phenomenon of twilight, and find the time of the year when twilight is shortest at a given place. What is the lowest latitude at which twilight lasts all night?

14. Show that aberration decreases the latitude λ and longitude l of a star respectively by

$$k \sin \lambda \sin (\odot - l), k \sec \lambda \cos (\odot - l),$$

where \odot denotes the sun's longitude, and the ratio of k to the unit of circular measure is that of the orbital velocity of the earth to the velocity of light.

Show that the distance of the star from a neighbouring star is approximately diminished by $kD \cos \lambda \sin (\odot - l)$, where D is the distance between the two stars, expressed in circular measure.

15. If two planets revolve in coplanar circles of radii a, b respectively, show that either appears stationary as seen from the other when their

heliocentric longitudes differ by $\cos^{-1} \frac{\sqrt{ab}}{a+b-\sqrt{ab}}$.

Show that, if the orbit of the outer planet, instead of being a circle, is an ellipse of eccentricity e and semi-axis a , and it is in opposition at perihelion, its motion will then appear to be direct provided that $e > \frac{a-b}{a+b}$.

MATHEMATICS (B).

FIRST PAPER.

Examiner—R. P. PARANJPYE, ESQ., M.A.

N.B.—Not more than EIGHT questions are to be attempted.

1. Explain what is meant by the radical axis of two circles. Show how to find the simplest form for the equation of a series of coaxial circles, and enunciate some of the important properties of limiting points of such a system.

Given the two circles K_1 and K_2 whose equations are

$$x^2 + y^2 - 2k_1x - f^2 = 0, \quad \text{.}$$

$$x^2 + y^2 - 2k_2x - f^2 = 0.$$

Determine a circle P which cuts both these circles so that the common chords are respectively diameters of K_1 and K_2 . Show that the locus of the centre of the circle P is a straight line. Calling this straight line the *secondary radical axis* of the two circles, show that the three secondary radical axes of three circles taken in pairs are concurrent.

2. Prove the harmonic property of the pole and polar of a conic.

If the tangents to the parabola $y^2 - 4ax = 0$ be regarded as the polars with respect to the circle

$$x^2 + y^2 - 4ax - 4a^2 = 0, \quad \text{.}$$

find the locus of the pole.

3. Find the condition that the two lines

$$y - y' = \lambda (x - x');$$

$$y - y' = \mu (x - x'),$$

should be conjugate with respect to the conic

$$ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0.$$

Hence show how to find the foci of a conic given by the general equation.

Obtain in this way the focus of the parabola

$$x^2 - 2xy + y^2 - 4x - 8y + 10 = 0.$$

4. The tangential equation of a conic is

$$au^2 + 2huv + bv^2 + 2gu + 2fv + c = 0,$$

where $ux + vy = 1$ is the equation of a line in Cartesian co-ordinates. Show how to determine the nature of this conic by taking into account the fact that the tangents from a point at infinity to an ellipse are always real, to a hyperbola sometimes real and sometimes imaginary, and that to a parabola only one finite tangent can be drawn in a given direction.

Determine the nature of the conic whose tangential equation is

$$25u^2 + 30uv + 9v^2 + 10u + 6v + 1 = 0.$$

5. Interpret the equation $LM - kN^2 = 0$, where $L = 0$, $M = 0$, and $N = 0$ represent straight lines, and k is some constant; and find the equation of the tangent at a point of this conic.

If $L \equiv y - x - 3$, $M \equiv 2y + x + 2$, and $N \equiv 2y + 5x - 10$, find the locus of the centre of the above system of conics (where k is variable), and determine the particular conic of the system which touches the axis of x .

6. Find the general equation of all conics in trilinear co-ordinates which circumscribe the triangle of reference, and determine in particular those which are rectangular hyperbolas. Prove hence that these rectangular hyperbolas all pass through the orthocentre of the triangle of reference.

Determine those conics of the above system which have the tangent $\lambda a + \mu \beta = 0$ at the point $(a=0, \beta=0)$, and find with respect to these conics the locus of the poles of a given line.

7. Show that the equations of a conic in space can be put in the form

$$x = \frac{a_2 \lambda^2 + a_1 \lambda + a_0}{d_2 \lambda^2 + d_1 \lambda + d_0}, \quad y = \frac{b_2 \lambda^2 + b_1 \lambda + b_0}{d_2 \lambda^2 + d_1 \lambda + d_0}, \quad z = \frac{c_2 \lambda^2 + c_1 \lambda + c_0}{d_2 \lambda^2 + d_1 \lambda + d_0}.$$

Find the condition between the constants that it should be a parabola.

The co-ordinates of two points M and M' are (x, y, z) and (x', y', z') . If P be a point connected with these so that the co-ordinates of P (X, Y, Z) are given by the relations $X = xx'$, $Y = yy'$, $Z = zz'$, find the locus described by P if M and M' move, independently of each other, on the line

$$\frac{x-a}{\alpha} = \frac{y-b}{\beta} = \frac{z-c}{\gamma}.$$

8. Show that the equations of two lines in space can be conveniently put in the forms

$$y = kx, z = c; \quad y = -kx, z = -c.$$

A variable sphere touches the two lines

$$\begin{aligned} x &= 2, & x + y &= 0, \\ z &= -2, & x - y &= 0. \end{aligned}$$

Find the locus (S) of its centre, and find its rectilinear generators. Verify that Ox, Oy, Oz are the axes of symmetry of the surface S , and explain how this result could have been foreseen from the conditions.

9. Examine the nature of the surface whose equation is

$$4x^2 + 4y^2 + 12z^2 + 12yz + 4xy + 4x + 2y + 3z = 0.$$

10. Obtain the equation of the tangent plane to a surface $f(x, y, z) = 0$ at any point.

Consider the surface of the third degree whose equation in rectangular co-ordinates is

$$(x^2 + y^2)(x + a) + z^2(x - a) = 0.$$

Show that there exist an infinite number of spheres whose centres are in the plane xy and which are orthogonal to the surface at all the finite points of intersection. Find also the locus of these centres.

11. Prove that the locus of the vertex of a right circular cone, of which a given ellipse is a section, is a hyperbola.

Given a solid cone on an elliptic base the foci of which are marked, give a method, as simple as you can, of determining without penetrating into the substance of the cone whether or not it is right circular.

12. Obtain the radii of curvature and torsion of a curve in space.

If $\alpha, \beta, \gamma, \alpha', \beta', \gamma', \alpha'', \beta'', \gamma''$ be the direction cosines of the

tangent, principal normal, and the binormal at any point of a curve, show that

$$\frac{d\rho}{ds} = \frac{a'}{\rho}, \quad \frac{d a'}{ds} = -\frac{a}{\rho} \frac{a''}{\tau}, \quad \frac{d a''}{ds} = \frac{a'}{\tau},$$

where ρ and τ are the radii of curvature and torsion.

Show that in a helix the ratio of these two radii is constant, and that conversely the helix is the only curve in which this ratio is constant.

MATHEMATICS (B).

SECOND PAPER.

Examiner—THE HON'BLE MR. JUSTICE ASUTOSH MOOKERJEE
SARASWATI, M.A., D.L., D.Sc., F.R.A.S., F.R.S.E.

You are not permitted to attempt more than TEN questions.

1. If y and z are functions of x connected by the relation $yz + ay + bz = 0$, prove that

$$\frac{2}{y} \frac{dy}{dx} - \frac{d^2y}{dx^2} \Big| \frac{dy}{dx} = \frac{2}{z} \frac{dz}{dx} - \frac{d^2z}{dx^2} \Big| \frac{dz}{dx}.$$

2. If x, y are connected with the variables λ, μ , by the equations

$$cx = \lambda\mu$$

$$c\mu = \sqrt{\{(\lambda^2 - c^2)(c^2 - \mu^2)\}},$$

prove that

$$\frac{d\lambda}{\sqrt{(a^2 - \lambda^2)}} + \frac{d\mu}{\sqrt{(a^2 - \mu^2)}} = 0$$

represents a series of circles having double contact with the conic $\lambda = a$.

3. Find the relation of the curves

$$p = \frac{r^2}{k^2} f\left(\frac{k^2}{r}\right)$$

$$\frac{k^2}{r} = f\left(\frac{k^2}{p}\right)$$

$$\frac{k^2 p^2}{r^3} = f\left(\frac{k^2 p}{r^2}\right)$$

to the curve

$$p = f(r)$$

where k is the radius of the circle whose centre is the pole.

4. Trace the curve

$$x(7y + z - 1)(7y - z - 1) + 120.y^3 = 0.$$

Find all the points of inflexion (one of which is at the origin), and also the asymptotes, one of which is

$$z + 3y + \frac{21}{11} = 0.$$

5. Establish the formula for radius of curvature

$$\rho^2 = \frac{dx}{d\psi} \frac{d^2y}{d\psi^2} - \frac{dy}{d\psi} \cdot \frac{d^2x}{d\psi^2}.$$

A straight line is drawn through a point P on the curve making an angle $n\psi$ with the axis of x , where ψ is the angle made with the axis by the tangent at P . Prove that the normal at the point where the line touches its envelope, cuts off one $-n^{\text{th}}$ of the radius of curvature at P .

6. Prove that a system of tri-confocal Cartesians is cut orthogonally by the confocal circle whose centre is the external focus of the system.

7. If a lamina have three straight lines traced upon it, and is moved so that two of the straight lines pass through fixed points, find the envelope of the third carried line.

8. Prove that

$$\int_0^1 \frac{x^{a-1}}{1+x} dx = \frac{1}{a} - \frac{1}{a+1} + \frac{1}{a+2} - \dots$$

Explain the nature of the difficulties involved in your proof and the way in which you would justify the process you have used.

9. Prove that

$$\int_0^a e^{-\left(x^2 + \frac{a^2}{x^2}\right)} dx = \frac{\sqrt{\pi}}{2} e^{-2a}.$$

Is it allowable here to differentiate under the integral sign for all values of a ?

10. Prove rigorously that

$$\begin{aligned} & \int_0^\infty dx \int_b^\infty e^{-xy} \sin x dy \\ &= \int_b^\infty dy \int_0^\infty \sin x dx \end{aligned}$$

where b is any given positive number, and deduce that

$$\int_0^\infty \sin x dx = \frac{1}{2}.$$

11. Prove that

$$\int_0^{\frac{\pi}{2}} \int_0^{\frac{\pi}{2}} \sin x \cdot \sin^{-1}(\sin x \cdot \sin y) dx \cdot dy = \frac{\pi}{2} \left(\frac{\pi}{2} - 1 \right).$$

12. Apply the theorem of Fourier, to find a series of cosines of multiples of x , which will represent $f(x)$ in $0 < x < \pi$, when

$$f(x) = 0 \quad \left(0 < x < \frac{\pi}{2} \right)$$

and

$$f(x) = \frac{\pi}{2} \quad \left(\frac{\pi}{2} < x < \pi \right)$$

Illustrate by a diagram.

13. Prove that

$$\frac{2a^2}{\pi} \int_0^\infty \cos\left(\frac{\theta x}{a}\right) \frac{dx}{\theta^2} \int_0^\theta r^2 \cos r \, dr \\ = x^2 \text{ or } 0, \text{ according as } x < \text{ or } > a.$$

14. If

$$f(\lambda) = \int_0^\pi \frac{\sin\left(\lambda \tan \frac{\theta}{2}\right)}{\sin \theta} d\theta,$$

interpret geometrically

$$y = x f(\sin x).$$

15. Determine a plane closed curve of given perimeter which shall include a maximum area.

MATHEMATICS (B).

THIRD PAPER.

Examiner—G. W. KÖCHLER, ESQ., M.A.

Candidates must not attempt more than SEVEN questions.

The figures in the margin indicate full marks.

A.

1. Find the condition that a system of forces acting on a rigid body, is reducible to a single force, and determine the equations of the straight line in which it acts. 10

ABCD is a tetrahedron; shew that a system of six forces, acting along the edges, and in the direction *AB*, *AC*, *AD*, *BC*, *CA*, *AB*, respectively, cannot reduce to a single force.

2. If four forces keep a body in equilibrium, shew that they must all lie on a hyperboloid of one sheet. 10

Three forces, whose lines of action are given, but not their magnitudes, have a single resultant. Prove that the surface traced out by the line of action of resultant, is a hyperboloid of one sheet.

3. Discuss the problem of the wearing away of a step by the friction of a pivot, and find the equation of the tractory or anti-friction curve. 10

4. (a) A paraboloid is found by the revolution of a parabola about its axis, and a portion of its surface is cut off by a plane perpendicular to the axis. Find the distance of this plane from the vertex, if the distance of the centroid of the surface is equal to the latus rectum.

(b) A cardioid revolves round its axis; find the centre of mass of the solid generated.

5. A string rests on a rough curve in limiting equilibrium under the action of any forces in the plane of the curve; write down the equations of equilibrium. If the tensional forces at the ends of the string are the only forces acting, find the relation between these forces. 10

A uniform heavy string of length *l* hangs over a rough cylinder

of radius a , whose axis is horizontal, with its ends in the same horizontal line; find the distance through which it must be displaced before it begins to slip.

6. Determine the laws of attraction for which the attraction of a uniform spherical shell on any external particle is the same as if the shell were condensed into an infinitely small particle at the centre. 10

7. Shew that the amount of work required to scatter the particles of a given self-attracting system to infinite distances from each other $= \frac{1}{2} \int V dm$, when V is the potential at any point, the integral being taken throughout the system in its given configuration. 10

Find the work done by the material attraction of particles coming together from an infinite distance to form a uniform sphere of radius R .

8. State and prove Green's theorem. 10

Shew by means of it that the mean value of the potential over the surface of a sphere due to any distribution of matter is equal to the potential at the centre due to the external mass, plus the potential which would be produced at the centre by distributing the internal mass as a shell over the surface.

9. Find the conditions for a pure strain, and shew that every strain can be resolved into a pure strain and a rotation. 10

B.

Write an essay on one only of the two following subjects:—

(a) The funicular polygon. 30

(b) The attraction of ellipsoids. 30

MATHEMATICS (B).

FOURTH PAPER.

Examiner—G. W. KÜCHLER, ESQ., M.A.

Candidates must not attempt more than SEVEN questions.

The figures in the margin indicate full marks.

A.

1. Find expressions for the accelerations of a point moving in a tortuous curve, along the tangent, and the principal normal. 10

A circle of radius r_1 rolls on a circle of radius r_2 ; if ω be the angular velocity of the circle at any instant, find the acceleration of the point of contact. •

2. A particle moves in a straight line under the action of a force varying as $\frac{1}{x^n}$, where x is the distance of the particle from a fixed 10

point in the line. If the particle start from a point at an infinite distance, find the time of moving from a distance a to the centre.

If $n = 1$, and the particle start from rest at a distance a , shew that the

time $= a \sqrt{\frac{\pi}{2\mu}}$, where μ is the absolute force.

3. Discuss the motion of a particle in a plane under the action of a force to a fixed point proportional to the distance from that point. 10

Two tangents are drawn to an ellipse described by a particle about its centre, from any point of the director circle; if x_1, y_1, x_2, y_2 , be the co-ordinates of the points of contact, and v_1, v_2 , the velocities at those points, show that $v_1 v_2 = \mu(x_1 y_2 - x_2 y_1)$, where μ is the absolute force.

4. Establish the formula 10

$$\frac{d^2 u}{dv^2} + u = \frac{P}{h^2 u^2}, \text{ for a central orbit.}$$

If $P = \mu.u^n$, and the particle is projected with the velocity from an infinite distance, determine the orbit.

5. A particle moves on a surface of revolution, whose axis is vertical, under the action of gravity; determine the motion. 10

A heavy particle moves on a smooth spherical surface; shew that if the velocity be due to the level of the centre, the pressure on the surface will vary as the depth below the centre.

6. A particle moves in a resisting medium under a central attraction, determine the orbit. 10

A particle describes an equiangular spiral under a central attraction in a medium, whose resistance varies as the square of the velocity; find the distance at which the attraction is a maximum.

7. Find the time of oscillation of a compound pendulum. 10

Find the length of the simple equivalent pendulum in the case of a circular arc oscillating about an axis through its middle point perpendicular to the plane of the arc.

8. Shew how the tendency of a rod to break can be measured, and find the measure of the breaking couple at any point P . 10

A rod turns about one of its extremities: find the point at which the tendency to break is a maximum.

9. If a system of bodies is in equilibrium, and one of the supports suddenly gives way, show how to determine the initial values of the reactions existing between the several bodies. 10

A circular disk is hung, with its plane horizontal, from a fixed point vertically over its centre, by means of three equal strings attached to three fixed points in the circumference of the disk at equal distances from each other. If one of the strings is cut, find the initial tensions of the other two.

B.

Write a short essay on either—

(a) The Kinematics of a rigid body moving parallel to a fixed plane; or, 30

(b) D'Alembert's principle. 30

MATHEMATICS (B).

FIFTH PAPER.

Examiner—R. P. PARANJPYE, ESQ., M.A.

N.B.—Not more than EIGHT questions should be attempted.

1. Find the equation of pressure in a fluid at rest.

A canal of water bounded by two vertical parallel walls P and P' has one end closed by another vertical wall A perpendicular to P or P' . Its other end is open, but to prevent the liquid flowing out indefinitely, a horizontal current of air of constant velocity acts upon the water in a direction perpendicular to the wall A so as to push the water up against the wall A . The bottom of the canal is horizontal. Assuming that the surface of the water is a cylinder whose generating lines are perpendicular to the walls P and P' and that the pressure due to the current of air on each element of the surface is normal to that element and proportional to the square of the normal component of the velocity, find the curve formed by the cross section of the cylinder.

2. A fluid which fills a hollow cone of height h , and angle 2α and vertex downwards has its density proportional to the depth. It is poured into a rectangular vessel whose cross section is S . Find the law of density in the new vessel.

What should the form of the vessel be if the new law of density is variation according to the square of the depth?

3. Show how to obtain the centre of pressure on any plane surface immersed in a fluid of variable density.

A thin conical shell, vertical angle 2α , is bounded by a plane inclined at an angle θ to the axis of the cone, and is closed by an elliptical lamina of the same substance and thickness as the shell. If the shell is now held under water with the axis of the cone horizontal, prove that the whole pressures on the curved surface and on the elliptic base are in the ratio of $\sin \theta$ to $\sin \alpha$.

4. With reference to a floating body define the *surface of flotation* and the *surface of buoyancy*, showing that the former need not be, while the latter must be, a synclastic surface. Investigate the conditions for the existence of a metacentre.

Prove that the indicatrix of the surface of buoyancy is similar and similarly situated to the ellipses of inertia of the section of the body by the plane of flotation, and that the directions of any axis of rotation in that plane and the tangent to the corresponding curve on the surface of buoyancy are directions of conjugate diameters in the indicatrix.

5. A vessel in the form of a cube of side $12a$ containing liquid is placed so as to rest on the top of a perfectly rough fixed sphere of radius $5a$: neglecting the weight of the vessel, prove that for displacements in planes parallel to the vertical faces there will be stability provided the depth of the liquid be between $4a$ and $6a$.

6. Prove the law $pv^\gamma = \text{constant}$ for the adiabatic expansion and contraction of gases.

Prove that the atmosphere cannot be in equilibrium unless temperature be uniform over each horizontal plane.

Assuming that the height of the homogeneous atmosphere is 25,000 feet when the temperature on the ground is 0°C ., show that if the den-

sity decreases upwards, the temperature cannot diminish upwards at a rate greater than 1°C. in about 90 feet.

7. Show that if t, t' be the normal components of the surface tensions across the lines of curvature at any point of a membrane and ρ, ρ' be the principal radii of curvature, the difference of the pressures on the opposite sides of the membrane is $\frac{t}{\rho} + \frac{t'}{\rho'}$.

A light envelope in the form of a paraboloid of revolution, with axis vertical and vertex downward, is filled with liquid to a height h . The upper part is rigid and the lower a flexible inextensible membrane. Show that in order that the latter may retain its form its height must not exceed

$$\frac{1}{2} \{4h - 3a + (16h^2 + 8ah + 9a^2)^{\frac{1}{2}}\}$$

where $4a$ is the latus rectum of the paraboloid.

8. Obtain the equation of continuity which is suited to Euler's equations of fluid motion.

A spherical hollow of radius a exists in an infinite mass of fluid which is at rest, the pressure at infinity being zero; and a force per unit mass to the centre equal to μr^{-n} at distance r , where $n > 1$, begins to act. Show that the time of the cavity filling up is

$$\frac{\sqrt{\pi} a^{\frac{n+1}{2}}}{5} \sqrt{\frac{2(n-1)(n-4)}{\mu}} \frac{\Gamma\left(\frac{n+1}{2n-3}\right)}{\Gamma\left(\frac{5}{2n-8}\right)}$$

or

$$\frac{\sqrt{\eta} a^{\frac{n+1}{2}}}{n+1} \sqrt{\frac{2(n-1)(4-n)}{\mu}} \frac{\Gamma\left(\frac{5}{8-2n}\right)}{\Gamma\left(\frac{n+1}{8-2n}\right)},$$

according as $n > < 4$.

9. Prove that in the irrotational motion of a liquid under a conservative system of forces the pressure is given by the equation

$$\frac{p}{\rho} + V + \frac{1}{2}q^2 + \frac{\delta\phi}{\delta t} \text{ a function of the time,}$$

the motion being referred to fixed axes.

The axes to which the motion is referred rotate with angular velocities $1, 0_2, 0_3$; show that

$$\frac{p}{\rho} + V + \frac{1}{2}q^2 + \theta_1(zv - yw) + \theta_2(xv - zu) + \theta_3(yu - xv) + \frac{\delta\phi}{\delta t}$$

is a function of the time.

10. Prove the existence of Earnshaw's stream function, and find the relation between it and the velocity potential when one exists.

Write down the velocity potential and the current function for the case of two-dimensional motion in an infinite liquid containing two parallel vortex-filaments of equal intensity at the points $(a, 0)$ and $(-a, 0)$ whose rotations are in opposite directions, and find the velocity with which the vortex pair will travel through the fluid.

What is the condition satisfied by the current function at the boundary of a cylinder which is (1) moving with uniform velocity V parallel to the axis of y , (2) rotating with angular velocity ω about the origin?

11. Straight crested waves of length λ are travelling with velocity U along a horizontal canal of rectangular section and depth h ; show that

$$U^2 = \frac{g\lambda}{2\pi} \tanh \frac{2\pi h}{\lambda}.$$

Show that if the water is flowing with velocity V and the bottom of the canal is agitated so that its form is given by $a \cos mh (x-vt)$, where a is small, the form of the free surface is given by

$$y = a' \cos m (x - vt)$$

where
$$\frac{a}{a'} = \frac{g}{mv(V-v)} \sinh mh + \cosh mh.$$

21. Explain the phenomenon of reflection and refraction of a sound wave at a plane surface of separation.

Verify that the energy of the incident wave is exactly equal to the sum of the energies of the reflected and refracted waves.

MATHEMATICS (B).

SIXTH PAPER.

Examiner—THE HON'BLE MR. JUSTICE ASUTOSH MOOKERJEE,
SARASWATI, M.A., D.L., D.Sc., F.R.A.S., F.R.S.E.

You are not permitted to attempt more than TEN questions.

1. Calculate the southerly and easterly deviations of a falling body at a place in north latitude, and, hence obtain a proof of the rotation of the earth.

2. Given the declination and hour angle of a heavenly body determine its altitude and azimuth.

On a day, when the sun set at 6.55 p.m. at a place in latitude 52° , and was on the meridian at noon, at what time was it seen in the west?

3. Calculate the latitude from two observations of the sun and the elapsed time.

4. Define the equation of time, and examine the separate effects of its two principal causes. Does only one or do both of these causes contribute towards the fact that the earliest sunset according to the clock comes before the shortest day?

5. Explain the term parallax. An observer in latitude ϕ finds the apparent declination and hour angle of a celestial body to be $(\delta - \beta)$ and $(h + \alpha)$; the values of these coordinates referred to the centre of the earth are δ and h . Prove the formula for horizontal parallax Π ,

$$\frac{\sin \Pi \sin \phi}{\cos \delta} = \tan \delta - \frac{\tan (\delta - \beta) \sin h}{\sin (h + \alpha)}.$$

6. Give a general description of the motion of the axis of the earth and explain the Precession and Nutation of the Equinoxes.

If there be a small change k in the inclination of the equator of the earth to the ecliptic, the corresponding small changes in the Right Ascension α , and Declination δ , are $-k \cos \alpha \tan \delta$, $k \sin \alpha$.

7. Calculate the duration of twilight at a given place on a given day, assuming that twilight lasts till the sun is 18° below the horizon.

Show that in lat. $55\frac{1}{2}^\circ$, there is no real night from about August 5.

8. Prove that all the stars which at a given epoch have no precession

in right ascension lie on a quadric cone, whose circular sections are parallel to the plane of the ecliptic and the plane of the equator.

9. State the conditions necessary for a solar and a lunar eclipse, and give limits for the possible number of eclipses in any year.

10. A ship goes from a place *A* (long. 10° W., lat. 60° N.) to *B* (long. 70° W., lat. 30° N). Show that if it follows a straight line course on Mercator's projection, its path is inclined at about $53^{\circ} 45'$ to the meridian, whilst for a great circle course, it would start at an inclination of about $80^{\circ} 30'$ to the meridian.

11. Enunciate and prove Newton, Lemma VI.

Find the subtangent in the semi-cubical parabola.

12. Enunciate and prove Newton, Lemma XI.

Find the focal chord of curvature at any point of the cardioid.

13. If a body revolve in an equiangular spiral, find the law of centripetal force tending to the pole, and show that the paracentric velocity varies inversely as the distance.

14. A body is describing a circle about a force which varies as the distance and tends to the centre; if the centre is suddenly transferred to a point in the circumference, at an angular distance of 60° from the position of the particle at any time, determine the orbit.

15. Determine the motion of a system of bodies attracting each other with forces varying as the distance between their centres.

NATURAL AND PHYSICAL SCIENCE (A).

CHEMISTRY.

FIRST PAPER.

Examiner—P. MUKERJEE, ESQ., B.Sc., M.R.A.S.

All questions carry equal marks. Not more than six questions to be attempted, of which either Question 7 or 8 must be one.

- Describe the isolation of argon by Ramsay and Rayleigh.
- Describe the preparation of pure phosphorous acid. What is the action of heat on the substance? Discuss its basicity.
- What is the action of nitric acid on (a) silver, (b) copper, and (c) mercury? What theories have been advanced to explain the action of the acid on metals?
- Discuss the constitution of the thiosulphates.
- Discuss the constitution and basicity of periodic acid, and classify the periodates.
- Give a concise account of the Periodic system for the classification of the elements. Justify the position of chromium in the system.
- Point out the analogies between the state of a substance in dilute solution and that of a gas.
- What is meant by the 'molecular conductivity' of an electrolyte, and how would you determine it practically?

NATURAL AND PHYSICAL SCIENCE (A).

CHEMISTRY.

SECOND PAPER.

Examiner—DR. P. C. RAY, D.Sc., Ph.D., F.C.S.

All questions carry equal marks. Not more than six questions to be attempted.

1. Describe the metallurgy of aluminium. What are the uses of the metal in common life, and what is its behaviour towards acids and alkalis?
2. Given a sample of cerite, how would you proceed to prepare pure salts of the various metals present in it?
3. In precipitating lead chloride from a solution of lead nitrate, what precautions would you take to make the precipitation as complete as possible? Explain by the ionic hypothesis the necessity of these precautions. State what is meant by 'solubility product.'
4. In what way does the boiling-point of a homogeneous mixture of two liquids vary with its composition? Illustrate your answer by means of curves.
5. Describe the preparation and properties of the following compounds of manganese: (a) oxides, (b) oxy-acids, (c) salts of oxy-acids.
6. Give some account of modern steel production.
7. What are cements and mortars? Explain the changes which occur during their setting.
8. Describe the preparation of three cobaltamines. What views have been held as to the constitution of the cobaltamines?

NATURAL AND PHYSICAL SCIENCE (A).

CHEMISTRY.

THIRD PAPER.

Examiner—E. R. WATSON, Esq., M.A., B.Sc.

All questions carry equal marks. Not more than six questions to be attempted.

1. Describe some method for the synthesis of ethyl alcohol from inorganic materials, giving practical details of the various processes involved.
2. State the physical properties of the following substances: ethyl-acetate, acetone, toluene, pyridine, urea, phenyl-hydrazine.
3. How would you effect the following transformations?
 (a) Benzoic acid into m-hydroxy-benzoic acid.
 (b) Phenol into o-hydroxy-benzoic acid.

(c) Benzene into acetophenone.

(d) Phthalic acid into salicylic acid.

(Give practical details^a of the processes involved.)

4. Describe carefully the action of the following reagents on dextrose :—
(a) Sodium amalgam, (b) cold bromine water, (c) nitric acid, (d) hydrocyanic acid, (e) acetyl-chloride, (f) hydroxyl-amine.

5. A substance of the formula $C_{15}H_{10}O_6$ on acetylation yielded a derivative which, analysed by combustion in the ordinary way, gave the following figures :—

0.1108 gave 0.2465 CO_2 and 0.0399 H_2O .

This derivative could be hydrolyzed giving back again the original substance which could be collected and weighed. 0.5283 of the acetyl derivative gave 0.3310 of the original substance. Determine the formula of the substance formed on acetylation.

6. What is the action on benzaldehyde of the following substances—
(a) Phosphorus pentachloride, (b) aqueous ammonia, (c) phenyl hydrazine, (d) hydroxyl amine ?

Discuss the constitution of the two benzaldoximes.

7. Describe with practical details the preparation of quinoline. What constitutional formula is assigned to this substance, and on what grounds ?

8. Give an account of Körner's researches on the orientation of the bromine atoms in the various di-bromobenzenes.

NATURAL AND PHYSICAL SCIENCE (A).

CHEMISTRY.

FOURTH PAPER,

PRACTICAL.

Examiners— { E. R. WATSON, ESQ., M.A., B.Sc.
 { DR. P. C. ROY, D.Sc., PH.D., F.C.S.

[In the three days' practical examination there are five distinct pieces of work and each carries 60 marks].

1. Make a qualitative analysis of the mixture given.
2. You are given an organic substance containing sulphur. Proceed to determine sulphur in this substance by Carius' method, but stop when you have filled and sealed the bomb-tube and show to the examiners. (This preparation may be continued on the following day if necessary.)

NATURAL AND PHYSICAL SCIENCE (A).

CHEMISTRY.

FIFTH PAPER.

PRACTICAL.

Examiners—{ E. R. WATSON, ESQ., M.A., B.Sc.
DR. P. C. RAY, D.Sc., PH.D., F.C.S.

[In the three days' practical examination there are five distinct pieces of work and each carries 60 marks].

1. The filling and sealing of the Carius' bomb-tube may be complete if necessary.
2. You are given a mixture of common salt and white arsenic. Determine the percentage of white arsenic in this mixture.
3. You are given a very impure sample of nitric acid and are required to prepare therefrom a quantity of pure nitre and submit the same to the examiners. (This preparation may be continued on the following day if necessary).

NATURAL AND PHYSICAL SCIENCE (A).

CHEMISTRY.

SIXTH PAPER.

PRACTICAL.

Examiners—{ E. R. WATSON, ESQ., M.A., B.Sc.
DR. P. C. RAY, D.Sc., PH.D., F.C.S.

[In the three days' practical examination there are five distinct pieces of work, each carrying 60 marks.]

1. The preparation of a sample of pure nitre may be continued if necessary
2. You are given a mixture of two organic substances and are required to identify these two.

NATURAL AND PHYSICAL SCIENCE (B).

PHYSICS.

FIRST PAPER.

Examiner—DR. G. T. WALKER, M.A., Sc.D., F.R.S.

The questions carry equal marks. Full marks may be obtained by satisfactory replies to SEVEN questions.

1. Describe briefly the chief experiments of Faraday which established the existence of specific inductive capacities other than unity.

Where did Maxwell believe the energy of the electrostatic field to reside in the case of an ordinary Leyden jar in air?

2. Three condensers of given capacities are joined up (a) in cascade, (b) in parallel. Find the capacity of the system in the two cases.

Two Leyden jars *A*, *B* have capacities C_1 and C_2 respectively. The jar *A* is charged and a spark passed between *A* and *B* which was originally uncharged. Write down the equations which determine the charges in the jars after the spark.

3. Explain the method of images when applied to a charged particle in air in front of a conductor at zero potential filling all space behind an infinite plane surface.

Find the force acting on the particle.

4. Define the intensity of magnetization at any point of a solid body.

Obtain the magnetic force exerted in a very small cylindrical cavity in a magnetized body when the ratio of the length to the diameter is (a) very great, and (b) very small.

5. Find the potential at any point due to a uniformly magnetized sphere.

6. Find an expression for the E.M.F. of a simple voltaic cell in terms of the heat developed per unit current per unit time at the metallic junctions, the electrochemical equivalent of zinc, and the mechanical equivalent of the heat produced when one gramme of zinc is turned into zinc sulphate.

7. State Ohm's law and deduce the resistance of a system of conductors arranged in parallel.

Apply the result to the following case. The sides of a square *ABCD* and the diagonal *AC* are formed from wire of the same resistance per unit length and a current enters the framework at *A*, leaving it at *C*. Prove that the resistance of the framework is equal to that of one side multiplied by $(2 - \sqrt{2})$.

8. State Ampère's law for the magnetic field due to any closed linear circuit conveying a current; and obtain the magnetic potential due to two infinitely long straight wires conveying equal currents in opposite directions.

9. State briefly what is the practical effect of self-induction, and give its amount in terms of the number of lines of induction through a circuit due to a current in it.

Obtain the general equations giving the currents in two adjacent coils subject to given E.M. forces.

10. Prove that the velocity of propagation of plane waves in a non-conducting medium is $(\mu\kappa)^{-\frac{1}{2}}$ and that the electric and magnetic forces are at right angles to the direction of propagation.

NATURAL AND PHYSICAL SCIENCE (B).

PHYSICS.

SECOND PAPER.

Examiner—DR. G. T. WALKER, M.A., Sc.D., F.R.S.

Equal marks are attached to all questions except to 2 and 6, for which twice as many marks may be obtained as for the other questions. Full marks may be obtained by satisfactory replies to SEVEN questions, 2 and 6 each counting as two questions.

1. If e_1, e_2, \dots be the charges, and V_1, V_2, \dots the potentials of a system of conductors, prove that the potential energy of the electrostatic system is

$$\frac{1}{2}(e_1 V_1 + e_2 V_2 + e_3 V_3 + \dots).$$

2. Assuming the theorem of Gauss for the surface integral of normal electric force through any closed surface, obtain the equations

$$\begin{aligned}\Delta^2 V + 4\pi\rho &= 0, \\ \frac{dV_1}{dn_1} + \frac{dV_2}{dn_2} + 4\pi\sigma &= 0.\end{aligned}$$

Utilise these equations to deduce the charges necessary to produce the potential $V=0$, outside the sphere $r=a$, and $V=a^2-x^2-y^2-z^2$ within the sphere. Show that the total charge upon the surface is equal and opposite to the total charge within the sphere.

3. State briefly the properties of Faraday tubes of induction in an electrostatic field.

If the first conductor of a system has a positive potential while all the other conductors are connected to earth, prove that there can be no negative charge at any point of the first conductor.

4. Obtain the couples mutually exerted on two very small magnets AB, CD , arranged so that AB is pointing towards CD which is itself at right angles to AB .

5. Obtain the potential energy of a permanently magnetized shell of uniform strength in a magnetic field in terms of the number of lines due to the field which pass through the shell. Which direction of passing through the shell must be taken as positive?

Deduce an expression for the force tending to increase any co-ordinate θ of the shell.

6. State the law connecting the E.M.F. round a circuit with the charge in the surface integral of magnetic induction through the circuit.

A magnetic pole of strength m is moved along a curved path in the presence of a closed circuit of wire of resistance R and negligible self-induction. Denoting by s the length of the curved path described at any time, and by ω the solid angle subtended by the circuit at the pole, prove that the total quantity of electricity which has flowed round the wire since the pole was started is $m(\omega - \omega_0)/R$, where ω_0 is the initial value of ω . Show

also that the force acting on the pole is $mu \frac{d\omega}{ds}$, where u is the current in the wire.

7. Describe the d'Arsonval galvanometer, and give the elementary theory of the instrument.

8. Describe briefly some experiments which establish the similarity of the properties of electric waves and waves of light.

9. Give Hertz's ordinary equations connecting the changes in the electric and magnetic forces, *i.e.*, the medium is assumed to be non-crystalline and at rest.

Show that the equations are equivalent to those given by Maxwell's theory.

NATURAL AND PHYSICAL SCIENCE (B).

PHYSICS.

THIRD PAPER.

Examiner—J. J. DURACK, Esq., B.A.

Not more than EIGHT questions to be answered. All the questions carry equal marks.

1. Give an account of the effects produced on the freezing and boiling points by solutions of (a) electrolytes, (b) non-electrolytes.

2. Describe Regnault's experiments on the determination of the specific heat of a gas at constant pressure.

3. Describe Warburg and Kundt's experiments on the absolute conductivity of gases.

4. What is meant by the terms 'perfect gas' and 'permanent gas'?

In the equation $r = \frac{R}{m}\theta$, show that R is a constant for all gases (m is the molecular weight of the gas).

5. Give a full account of Griffiths' determination of Joule's equivalent.

6. Deduce the adiabatic equation for a perfect gas.

Show that $E\phi/E\theta = \gamma$ where $E\phi$ and $E\theta$ are the adiabatic and isothermal elasticities.

7. Deduce an expression for the efficiency of a reversible engine working through a Carnot's cycle.

8. State Wien's and Planck's laws of radiation from black bodies. Describe any experiment carried out to test the accuracy of those laws.

9. Define the term 'Solar Constant.' Describe any accurate method of determining the temperature of the Sun's surface.

NATURAL AND PHYSICAL SCIENCE (B).

PHYSICS.

FOURTH PAPER.

Examiner—J. J. DURACK, ESQ., B.A.*All the questions carry equal marks.*

1. Knowing that a surface *appears equally bright* in all directions, deduce an expression for the *intrinsic luminosity* in different directions.
2. Explain Doppler's principle. Show how the motion of the solar system relative to the fixed stars may be detected.
3. Explain the principle of the direct vision spectroscope.
4. Describe any method of measuring wave lengths of light.
5. Show how two plane polarized vibrations may be arranged to compound into a circularly polarized vibration. Describe any method of producing circularly polarized light.
6. Write a short essay on Combination tones.
7. Describe Kundt's method of determining the velocity of sound in a gas.
8. Give the theory of Laplace's correction to Newton's formula for the velocity of sound.
9. Describe an accurate method of determining the frequency of a tuning fork.

NATURAL AND PHYSICAL SCIENCE (B).

PHYSICS.

FIFTH PAPER.

PRACTICAL.

Examiner—C. W. PEAKE, ESQ., M.A.

Determine the constant of the Kelvin bridge provided by measuring the silver deposited from a silver nitrate solution by a current passing for a given time through the bridge.

Using the result thus obtained determine the E.M.F. of the cell provided with the help of a potentiometer of a known resistance.

NATURAL AND PHYSICAL SCIENCE (B).

PHYSICS.

SIXTH PAPER.

PRACTICAL.

Examiner—C. W. PEAKE, Esq., M.A.

Determine the specific gravity of the solid provided, which is soluble in water by means of Regnault's Volumenometer.

NATURAL AND PHYSICAL SCIENCE (C).

PHYSICS.

FIRST PAPER.

Examiner—G. W. KÜCHLER, Esq., M.A.

Candidates must not attempt more than TEN questions.

The figures in the margin indicate full marks.

1. Find the differential equations for the acceleration of a particle in an isotropic elastic medium, in which the displacements of the particles are the same in magnitude and direction for all points lying in the same plane drawn normally to a given line. 10

What is the solution of the equation, and what is its interpretation? 10

2. Describe Young's method of obtaining interference bands. If the distance between the two apertures be 1 mm., find the distance between the bands for red light.

What are the defects in this method, which prevent the anticipated experimental results being perfectly realised?

3. Find the resultant of a system of vibrations by the graphic method. 10

Discuss particularly the case, where the phase difference between two consecutive vibrations is infinitesimal and the amplitudes are equal.

4. Apply the graphic method to the discussion of the effect of a plane wave, divided into Fresnel's zones, at its pole. 10

5. Enunciate Fermat's law of least time, and shew that it governs the refraction of light from one medium to another. 10

Apply this principle to find the relation between the conjugal focal distances in the case of a convex lens.

6. Discuss the passage of a plane wave through a slit, and shew that the positions of maximum illumination are given by the equation $a = \tan \alpha$. 10

Plot the results graphically, as well as the corresponding intensities.

7. Give the theory and construction of the Echelon grating. 10

8. Describe Talbot's method of obtaining achromatic fringes by 10

allowing a beam of solar light to fall on a combination of two right-angled isosceles prisms, and explain clearly the cause of the achromatism.

9. Describe Rochon's and Wollaston's prisms, and find an expression for the angular separation of the ordinary and extraordinary rays in each case. 10

10. What is meant by the normal velocity surface in Fresnel's theory of double refraction? Find its equation. 10

11. Shew with the help of a figure the positions of the axes of single wave velocity and of single ray velocity, and find their equations. 10

Why are these lines called the axes of internal and external conical refraction respectively?

12. What is meant by the isochromatic surface, when divergent plane-polarised light falls on a crystal? Find its equation, when the crystal is uniaxial. 10

In the case of a plate cut perpendicularly to the optic axis, find the radii of the rings.

13. Describe Babinet's compensator, and shew how it is used in the study of plane-polarised light. 10

NATURAL AND PHYSICAL SCIENCE (C).

PHYSICS.

SECOND PAPER.

Examiner—G. W. KÜCHLER, ESQ., M.A.

Candidates must not attempt more than FIVE questions.

The figures in the margin indicate full marks.

A.

1. Show that objects appear equally bright at all distances. 10

A luminous point is placed inside a cylindrical vessel at a point on the axis half-way between the two circular ends. If h be the length of the cylinder, and a the radius of each end, find the total illumination of the curved surface.

2. If a ray of light be refracted at any surface, shew that the angles which the incident and refracted rays make with any plane through the normal to the refracting surface, obey the law of refraction, and that the projections of the incident and refracted rays on any plane through the normal themselves obey a law of refraction. 10

Extend these results to the case of refraction through a prism, when the ray does not lie in the principal plane of the prism.

3. Find Helmholtz's expression for the ratio of the linear magnitudes of the object and its image in the case of refraction at a spherical surface. 10

A pencil of rays is refracted directly through a transparent hemisphere, and when the hemisphere is reversed, the position of the geometrical focus remains the same, the distance of the origin of light from

the first refracting surface being equal in each case to half the radius. Find the index of refraction.

4. Find the positions of the cardinal points of a system of two lenses. 10

5. What is meant by a lens which is equivalent to a number of lenses? Find its focal length, and its position. 10

6. State and prove Cote's theorem with regard to the apparent distance of an object when seen through a number of thin lenses. 10

7. Give the construction, and explain the theory of Ramsden's eye-piece. 10

If F be the focal length of the object glass of an astronomical telescope fitted with a Ramsden's eye-piece, whose equivalent focal length is f , and d the distance of distinct vision, shew that the magnifying power of the telescope when viewing a very distant object is $F(f + 3d) : 3df$.

B.

Write an essay on one of the two following subjects:—

- (a) The Zeeman effect. 50
- (b) The relative motion of matter and the ether. 50

NATURAL AND PHYSICAL SCIENCE (C).

PHYSICS.

THIRD PAPER.

Examiner—P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.

Candidates are directed to answer only THREE questions belonging to each of the two sets of questions headed A and B.

The questions carry equal marks, the total number of marks allotted to six questions being one hundred.

A.

1. Write a note on musical intervals and on the relation of the diatonic and harmonic scales to each other, and indicate at least one method of representing a musical scale graphically.

2. Investigate the case of the composition of two harmonic vibrations at right angles to each other.

3. Distinguish between forced and natural vibrations. State the law of forced vibrations, and show that a string may be caused to vibrate in such a manner that any given harmonic component vibration together with a certain set of other harmonic vibrations shall be extinguished.

4. Give an exposition of the dynamical theory of transverse vibrations of elastic strings.

5. Show by an appropriate mathematical investigation that the modulus of elasticity of a given material can be determined experimentally by observing the tone due to the longitudinal vibrations of a rod made of that material, and having one end fixed and the other free.

6. Find an expression for the velocity with which a longitudinal vibratory disturbance is transmitted along a metallic rod, and discuss

the influence which the changes involving Poisson's ratio have on the result.

B.

1. Give an account of the vibration microscope and the uses to which it is put in experimental acoustics.
2. Write an essay on the composition of vowel tones.
3. By what method has the problem of the relation between the quality of a given sound and the phase of the corresponding vibrations been attacked? What results have been obtained?
4. Describe the construction of the Labyrinth and state the functions of its different parts, giving reasons for your statements.
5. What is the present state of our knowledge concerning combinational tones?
6. What do you know about beats of upper partial tones?

NATURAL AND PHYSICAL SCIENCE (C).

PHYSICS.

FOURTH PAPER.

Examiner—J. A. CUNNINGHAM, Esq., M.A., F.C.S., A.R.C.Sc.I.

It is not necessary to answer all the questions in order to obtain full marks. One complete answer is always worth more than several imperfect ones.

1. Trace briefly the history of our knowledge of the electrical conducting properties of air; and state more fully the results of recent experiments.

2. Find the surface density of electrification on a conducting sphere placed in a uniform field.

3. Show that the principle of Wheatstone's bridge is derived at once from Ohm's law.

Three Grove's cells, each of electromotive force 1.9 volts, and internal resistance 2 ohms, are joined in series. Two wires independently connect the poles of the battery. The resistance of one of them being 10 ohms, find that of the other in order that the total current may be half an ampere.

4. What is the *Peltier effect*? Describe carefully how it may be experimentally determined.

5. Give a full theoretical explanation of the back electromotive force of a motor.

A generator whose total E.M.F. is E volts, is employed to work a motor, the electrical efficiency of the arrangement being E . Show that, if the resistance of the whole circuit be R ohms, the energy wasted per second in heat is $E(1-\epsilon)^2/R$ joules.

6. Find the potential inside and outside a closed magnetic shell.

7. Explain the phenomenon of the singing arc, and show how the period of the note emitted can be regulated.

8. Show in outline how Lord Kelvin deduced the age of the earth from its present rate of cooling.

What recent discoveries have thrown an entirely new light upon the problem ?

9. Describe Joly's steam calorimeter.
10. How does temperature affect the E.M.F. of a primary cell ?
11. Explain thoroughly the theoretical importance of the porous plug experiment. What were the results found for actual gases ?
12. Define and explain the absolute scale of temperature.

NATURAL AND PHYSICAL SCIENCE (C).

PHYSICS.

FIFTH PAPER.

FIRST PRACTICAL PAPER.

Examiners— { P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.
J. A. CUNNINGHAM, Esq., M.A., F.C.S., A.R.C.Sc.I.

Full marks are assigned to any one of the following questions.

1. Determine the radii of curvature of the faces of the lenses which form the given system by various methods; assign to each result its proper weight and calculate the probable error.

2. Investigate, as completely as possible, the optical properties of the three given prisms, which are cut from the same crystal. Incidentally fix the two given nicols to the collimator and telescope tubes so that the planes of polarisation of the rays emergent from the nicols are exactly horizontal.

3. Determine the magnifying powers of the given combinations of eye-piece and object-glass. Show that the magnification depends on the length of the tube, and ascertain the constant of the given screw-micro-meter eye-piece.

4. The set of plane-parallel plates provided are cut similarly from pure crystals of the same mineral. Establish the relations between the magnitude of the notation of the plane of polarisation and the thickness of the plates. Ascertain the concentration of a solution of cane-sugar which in a tube 200 mm. in length produces the same relation as 1 mm. thickness of one of the given crystal plates. Test one of the plates to see whether it is cut exactly at right angles to the optical axis, and if not, what the angle of inclination is approximately.

5. Measure the wave-lengths of the most prominent lines in the flame-spectra of the given salts, using a Fresnel's Biprism.

6. Investigate the laws which govern the relation between the amount of light absorbed and the thickness of the absorbing strata, using for the purpose colourless as well as coloured solution. Map the absorption spectrum of one of the coloured solutions.

7. Examine the optical properties of the given plate, utilising chiefly the given microscope and microscopic accessories for the purpose. Test the plate for plane-parallelism.

8. Determine the wave-lengths of the lines in the emission spectrum of the gas contained in the given tube. Compare your results with the

results obtained from observations in a prism spectroscope, making use of the calibration curve of the latter.

9. Determine the magnifying power of the given telescope for different distances and by different methods.

10. Make an optical survey of the two given transparent plates.

NATURAL AND PHYSICAL SCIENCE (C).

PHYSICS.

SIXTH PAPER.

SECOND PRACTICAL PAPER.

Examiners— { P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.
J. A. CUNNINGHAM, Esq., M.A., F.C.S., A.R.C.Sc.I.

Time allowed—5 hours.

N.B.—You must not attempt more than ONE question in addition to question No. 1, on which the examination will be viva voce. Great importance is attached to the manner of writing out the record of your work.

1. (a) Join together the two bits of capillary tubing, and calibrate the whole tube thus formed. (b) Make a bulb (as nearly as possible spherical) of about 100 ccs. capacity at or near the middle of the given quill-tube.

2. Find the coefficient of apparent expansion of the liquid in the given thermometer.

3. Measure the coefficient of linear expansion of the given bar.

4. With the apparatus supplied determine the vapour pressure of the given mixture of water and alcohol, and then of pure water over a range of temperature. Can you deduce from these experiments anything about the vapour pressure of alcohol over the same range? Explain fully.

5. Find the Specific Heat of the given substance.

6. Determine the heat of vaporisation of the given liquid.

7. Find the molecular weight of the given substance by measuring the depression of the freezing point of ice.

8. Find Joule's equivalent.

9. Determine the temperature coefficient of the given bar magnet. Plot your results, and find their equation.

10. Compare the value of H at the two places indicated.

11. Determine the magnetic Dip and Declination. The error of the given chronometer is $+6^{\circ}23'$. Solar time will be 9 minutes 21.6 seconds ahead of true time at noon to-day.

12. By means of the apparatus supplied make a magnetic survey of the top of the table.

13. Make a careful comparison of the specific resistance of the two metals supplied.

14. Calibrate the given thermo-electric element as a thermometer.

15. Find the temperature in the middle of the given oven.

16. Find the figure of merit of the given galvanometer.

17. Calibrate the wire of the metre-bridge by the method of Strouha, and Barus.

18. Determine accurately the ratio of the two given resistances which are nearly equal.

19. Measure the internal resistance of the two cells supplied.

20. You have been supplied with some pure potassium chloride, and a second pure substance whose molecular weight is 134.6. The molecular conductivity of 1/50 normal solution of the former is 2.244×10^{-3} at 18° and 2.594×10^{-3} at 25° . Find the molecular conductivity of the latter.

NATURAL AND PHYSICAL SCIENCE (D).

BOTANY.

Paper-setters— $\left\{ \begin{array}{l} \text{A. HOWARD, ESQ. M.A., F.L.S.} \\ \text{MRS. A. HOWARD.} \end{array} \right.$

FIRST PAPER.

Examiner—P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.

The figures in the margin indicate full marks.

Only FOUR of the following questions are to be attempted.

1. Give an account of the group of Algae known as the *Siphonaeae*. 25
2. Describe the modes of reproduction met with in the *Ascomycetes*. 25
3. Give an account of the development and structure of the sporophyte of any species of *Equisetum*. 25
4. What changes take place in an angiospermous ovule after the act of fertilization? 25
5. Give an account of the origin of lateral roots in Phanerogams. 25
6. Describe the structure of the aerial roots of epiphytic orchids. 25

NATURAL AND PHYSICAL SCIENCE (D).

BOTANY.

SECOND PAPER.

Examiner—S. C. MAHALANABIS, ESQ., B.Sc., F.R.S.E.

Only FOUR of the following questions are to be attempted. The figures in the margin indicate full marks.

1. Give examples of the disposition of mechanical tissue in plants to secure rigidity. 25
2. Describe any experiments you have seen which illustrate the existence of root-pressure in plants. 25

3. Give an account, with examples, of the occurrence of *symbiosis* in the vegetable kingdom. 25
4. How would you demonstrate the following facts ?— 25
 - (a) The red rays of the solar spectrum play the most important part in the assimilation of carbon.
 - (b) The stomata are of importance in relation to gaseous interchange.
 - (c) Sugar is present in the tissues of germinating wheat.
 - (d) In a root the region of maximum growth is situated close behind the apex.
5. Give a detailed physiological explanation of the movement of climbing stems. 25
6. Write a short account of the various forms of asexual reproduction occurring in the vegetable kingdom. 25

NATURAL AND PHYSICAL SCIENCE (D).

BOTANY.

THIRD PAPER.

Examiners—{ P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.
S. C. MAHALANABIS, Esq., B.Sc., F.R.S.E.

Only FOUR of the following questions are to be attempted. The figures in the margin indicate full marks.

1. Write a short essay on the importance of fossil botany in phylogenetic investigations. 25
2. Give the general characteristics of the *Calycifloræ* and the differentiating characters of the component orders as represented in Bengal. 25
3. On which characters does the subdivision of the natural order *Orchidaceæ* depend ? 25
4. Describe the chief morphological deviations of the leaf from the typical dorsj-ventral form, and show how such deviation is related to environment and function. 25
5. Give examples of the manner in which the structure of flowers has been modified to ensure cross-fertilization. 25
6. Describe the common forms of æstivation, giving local examples in each case. 25

NATURAL AND PHYSICAL SCIENCE (D).

BOTANY.

FOURTH PAPER.

FIRST PRACTICAL PAPER.

Examiners—{ P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.
S. C. MAHALANABIS, ESQ., B.Sc., F.R.S.E.

The figures in the margin indicate full marks.

1. Describe, sketch and identify the given microscopic preparations. (L. S. stem *Musa*; T. S. root *Asparagus*; S. S. stem *Pinus*). 25
2. Make a series of preparations elucidating the microscopic structure of the given specimen and mount at least two of them in an appropriate medium. (Stem of *Calendula officinalis*). 25
3. Demonstrate micro-chemically the presence or absence of starch, albuminoids and fat in the given seeds. (Almond; Castor Oil). 25
4. Oral examination on methods used in anatomical botanical investigations. 25

NATURAL AND PHYSICAL SCIENCE (D).

BOTANY.

FIFTH PAPER.

SECOND PRACTICAL PAPER.

Examiners—{ P. BRÜHL, ESQ., M.I.E.E., F.C.S., F.G.S.
S. C. MAHALANABIS, ESQ., B.Sc., F.R.S.E.

The figures in the margin indicate full marks.

1. Describe, sketch and identify the given microscopic preparations. (T. S. Rhizome of *Aspidium*; Uredobuds of *Puccinia Graminis*; T. S. stem of *Lycopodium*). 20
2. Work out the anatomy of the given fern-leaf. (Sporophylls of *Aspidium Felix Mas*). 20
3. Examine the given material for algæ. 20
4. Assign to the given fungus its proper position in the system. 20
5. Oral examination on cryptogamic botany. 20

NATURAL AND PHYSICAL SCIENCE (D).

BOTANY.

SIXTH PAPER.

THIRD PRACTICAL PAPER.

Examiners—{ P. BRÜHL, Esq., M.I.E.E., F.C.S., F.G.S.
S. C. MAHALANABIS, Esq., B.Sc., F.R.S.E.

1. Describe, sketch and identify the specimen A.
2. Identify the specimens B, C, D.
3. Oral examination.

NATURAL AND PHYSICAL SCIENCE (F).

GEOLOGY AND MINERALOGY.

FIRST PAPER.

GEOLOGY.

Examiner—P. N. DATTA, Esq., B.Sc., F.G.S.

Questions of Group I with only two questions from those of Group II will carry full marks.

I.

1. Refute or justify the present line of demarcation between the Palæozoic and Mesozoic formations.
2. Discuss the homotaxis of the Gondwana system of rocks.
3. Give a brief description of the Cretaceous rocks of India, correlating them, so far as practicable, with those of England.

II.

4. Describe fully, with sketches, the origin and function of springs.
5. Describe the various kinds of faults; their effect on the strata affected, and the way you would detect them in the field.
6. Describe the origin and structure of veins.
7. Explain, with illustrative sketches, the structure of a mountain chain, and the method of ascertaining its age.

NATURAL AND PHYSICAL SCIENCE (F).

GEOLOGY AND MINERALOGY.

SECOND PAPER.

PALÆONTOLOGY.

Examiner—C. S. MIDDLEMISS, ESQ., B.A., F.G.S.

Any FIVE questions fully answered will secure full marks.

1. Describe the various modes of formation of siliceous organic deposits, quoting some well-known examples. How are greensand deposits constituted?

2. Give a classification of the order *Foraminifera*. Describe in detail the structure of the genera *Nummulina* and *Endothyra*; and briefly indicate their respective geological ranges and periods of maximum development.

3. Define the terms—*Porifera*, *Graptolitoidea*, *Hydrocorallinae*, *coenocare*, *columella*, *epitheca*, *dissepiment*, *atoll*, *glabella*, *pygidium*; and describe the thoracic limbs of any trilobite.

4. Describe in general terms the ambulacral system of the *Echino-dermata*. What is the organic and mineralogical structure of an echinoderm al ossicle or plate? Describe the family *Conoclypeidae*.

5. Draw diagrams showing the hard parts of *Waldheimia*. Contrast the *Spiriferidae* and the *Atrypidae*, giving the geological range of each.

6. Describe the initial chambers of the *Nautiloidea* and *Ammonoidea* respectively. Draw a few suture diagrams (enlarged) illustrative of the tetrabranchiate *Cephalopoda*, and briefly describe any six genera of *Ammonoidea* characteristic of the Trias.

7. Write a short account of the distribution in time and space of the *Proboscidea*.

8. Refer the following genera to their respective families and orders: *Glossopteris*, *Gangamopteris*, *Schizoneura*, and *Vertebraria*. Mention some genera of Cycads common in the Upper Gondwanas. Discuss very briefly the statement that 'in the Lower Gondwanas, reckoning from a European standpoint, we find a full-brown Mesozoic flora co-existing with a Palæozoic fauna.'

NATURAL AND PHYSICAL SCIENCE (F).

GEOLOGY AND MINERALOGY.

THIRD PAPER.

MINERALOGY AND PETROLOGY.

Examiner—T. H. HOLLAND, ESQ., D.SC., F.R.S., F.G.S.,
A.R.C.S.

You are permitted to attempt six questions only.

1. How would you demonstrate in a microscopic section, whether the double refraction of a particular mineral is strong or weak ?
2. Describe the principal varieties of intergrowths which characterise the minerals formed in rock-magmas.
3. Give an account of the Peridotite family.
4. Describe the minerals that are specially characteristic of contact zones between igneous intrusions and argillaceous sediments.
5. Give an account of the principal ores of zinc and silver.
6. Classify the minerals which have the general formula RS_2 . Describe the principal varieties.
7. Give a full account of the natural silicates of alumina of the formula $Al_2O_3 \cdot SiO_2$.
8. Write an account of the petrography of the characteristic rocks of the Dharwar system.

NATURAL AND PHYSICAL SCIENCE (F).

GEOLOGY AND MINERALOGY.

FOURTH PAPER.

CRYSTALLOGRAPHY AND INORGANIC CHEMISTRY.

Examiner—T. H. HOLLAND, ESQ., D.SC., F.R.S., F.G.S.,
A.R.C.S.

You are permitted to attempt six questions only.

1. How are crystal faces represented on the sphere of projection ? Show the relationship of the angle between the normals to two faces and their interfacial angle.
2. Describe the way in which etched figures assist in determining the symmetry of a crystal.
3. Give a full account of the crystallography of any two of the following minerals :—Blende, Pyrite, Quartz, Boracite, Hemimorphite.

4. A crystal of cassiterite is found to exhibit two pyramids of the second order. One of the pyramids is taken to be the unit form $\{101\}$, while the other, $\{h0k\}$, is to be determined. The angle between the faces (011) and $(0\bar{1}1)$ is $112^\circ 10'$, while the angle between the corresponding faces $(0hk)$ and $(0\bar{h}k)$ of the steeper pyramid is found to be $33^\circ 8'$. Estimate, either graphically or by calculation, the axial ratio $a : c$, and determine the numerical value of $(h0k)$. Point out how these two faces on the same crystal illustrate the 'law of rational indices.'

$$\text{Cotangent } 56^\circ 5' = \tan 33^\circ 55' = 0.6723.$$

$$\text{Cotangent } 16^\circ 34' = \tan 73^\circ 23' = 3.36157.$$

5. Define the terms 'water of crystallization' and 'water of constitution,' and describe how they are determined in a substance like epsomite.

6. Describe the micro chemical tests by which you would distinguish apatite from nepheline in thin sections.

7. How would you distinguish crystals of calcite from dolomite when both occur together in a microscopic section of a dolomitic marble?

8. Classify the simple oxides which occur as distinct minerals, giving the chemical composition of the chief substances and their crystalline forms to demonstrate the isomorphism of the families.

NATURAL AND PHYSICAL SCIENCE (F).

GEOLOGY AND MINERALOGY.

FIFTH PAPER.

MINERALOGY—PRACTICAL.

Examiners— $\left\{ \begin{array}{l} \text{T. H. HOLLAND, ESQ., D.Sc., F.R.S., F.G.S.,} \\ \text{A.R.C.S.} \\ \text{C. S. MIDDLEMISS, ESQ., B.A., F.G.S.} \end{array} \right.$

Any THREE questions fully answered will secure full marks.

1. Name and describe as fully as possible the following mineral specimens marked *A, B, C* (pink mineral only), *D, E, F, G, H, I*. (N.B.—*Simple determinative tests, such as blowpipe, hardness, specific gravity, may be freely used with these specimens.*)

2. Measure and record the interfacial angles, and name the principal faces shown in the specimens marked *J, K, L*. (*The specimens may not be injured.*)

3. The specimen marked *M* is an orthorhombic mineral showing the prism and brachypinacoids; calculate by graphic methods to the first place of decimals the relative axial values of \bar{a} and \bar{b} . In the specimen marked *N* the crystallographic axes are $a : b : c = 1 : 1 : 0.98$; by means of a diagram name and mark the principal faces shown, and the direction of the axes a, b , and c . (*The specimens may not be injured.*)

4. Name the minerals in the slides marked *O, P, Q*, describing their optical behaviour under the microscope.

The map displays the following features:

- Topographic Contours:** Dashed lines representing elevations of 600, 700, 800, 900, and 1000 feet.
- Geological Features:**
 - Granite:** Represented by a stippled pattern, forming a large central mass.
 - Diabase:** Represented by a solid black pattern, located in the upper right and lower right.
 - Quartzite:** Represented by a cross-hatched pattern, located in the upper left.
 - Buff with calc. bands:** Represented by a horizontal line pattern, located in the lower left.
 - Shallowly metamorphic at the base:** Represented by a white/unfilled area, located at the bottom center.
- Other Features:**
 - Streams:** Solid lines with arrows indicating flow direction.
 - Contours:** Dashed lines with numerical values.
 - Index:** A list of symbols and their meanings.

INDEX

- The figures 1000, 900, &c. in circles heights in feet of contour lines.
- Granite
 - Diabase
 - Quartzite
 - Buff with calc. bands
 - Shallowly metamorphic at the base

Fig. 1. The Figures 1000, 900, &c. indicate heights in feet of contour lines.

2. #... Beds vertical
+ " horizontal.

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|------------|--------------------------------------|
| Condover's | Desmit |
| Diawars | Taff with volc bombs &c |
| Grenate | Mindhyous (supplemental at the base) |

NATURAL AND PHYSICAL SCIENCE (F).

GEOLOGY AND MINERALOGY.

SIXTH PAPER.

PRACTICAL EXAMINATION IN GEOLOGY.

Examiners—{ T. H. HOLLAND, Esq., D.Sc., F.R.S., F.G.S.,
A.R.C.S.
C. S. MIDDLEMISS, Esq., B.A., F.G.S.

All the questions are to be attempted.

1. Name the fossils marked *A* to *L*, and indicate the biological position and the geological range of each of the genera.
2. Name generically, and describe in technical terms the fossils *M* to *R*.
3. Name and describe the rock specimens 1 to 12.
4. Draw a section from *P* to *Q* across the map placed before you.
5. Give an account of the geology of any part of the country you have personally visited.

Prebendary Roychand Studentship Examination.

1907.

ENGLISH.

FIRST PAPER.

Examiner—H. M. PERCIVAL, ESQ., M.A.

1. Render into modern English, as literally as possible, *nine* of the following extracts, selecting them from the Groups as indicated :—

GROUP A.—*Only four extracts ; two at least to be from poetry.*

(a) Ond his aerendracen beforan asende to ðære ðeode, ond him untweogendlice secgan het ðæt hie oðer sceolden, oppe ðæt lond aet him alesan, oppe he hie wolde mid gefeohte ferdon ond forærigan. Hie him þa gesceadwislice ondwyrdon, ond cwaedon ðæt hit gemalic waere ond unryhtlic ðæt swa oferwlenced cyning sceolde winnan on swa earm folc swa hie waeron.

(b) Þa ðæs on haerfeste þa wicode se cyng on neaweste ðære byrig, þa hwile þe hie hira corn-gerypon, ðæt þa Deniscan him ne mehton ðæs ripes forwiernan. Þa sume dæge rad se cyng up be ðære eae, ond gehawade hwaer mon mehte þa ea forwyrcean, þæt hie ne mehton þa scipu ut brengan. Ond hie ða swa dydon : worhton ða tu geweore on twa healfes ðære eae.

(c) Ydel bið se laecdom þe ne maeg ðone untruman gehælan ; swa bið eac ydel seo lar ðe ne gehælfð ðære sawle leahtras and unðeawas. Soðlice min lareow sumne cniht þe gewilnode ðæs ecan lifes þysum wordum laerde, ðæt he sceolde ealle his welan beceapian, and ðæt wurð ðearfum dælan, gif he wolde fullfremad beon.

(d) And eac her syn on earde apostatan abroðene, and cyrichatan hetole, and leodhatan grimme ealles to manege, and oferhogan wide godecundra rihtlaga and cristenra þeawa, and hocorwyrde dysige aeghwaer on þeode oftost on ða þing þe Godes bodan beoðað and swyðost on þa þing þe geornost to Godes lage gebyriað mid rihte.

(e) Hie dygel lond

warigead, wulfhleopu, vindinge naessas,
frecne fenngelad, ðær fyrgenstream
under naessa genipu niþer gewiteð,
flod under foldan. Nis ðæt feorr heonon
milgearnearces, ðæt se mere standeð,
ofer þæm hongiað hrimge bearwas,
wudu wyrtum faest, waeter oferhelmað.

(f) Ic eom rices leas

habbað me swa hearde helle clommas,
faeste befangan. Her is fyr micel

ufan and neoðone : ic a ne geseah
laðran landscepe ; lig ne aswamað
hat ofer helle. 'Me hafað hringa gespong,
sliðhearda sal siðes amyrred,
afyrred me min faðe, fet synt gebundene,
handu gehæfte.

- (g) Is þæt torhte lond twelfum herra
folde faeðmrimes, swa us gefreogun gleawe
witgan þurh wisdom on gewritum cypað,
þonne aenig þarþ beorga þe her beorhte mid us
hea hlifiað under heofontunglum.
Smylte is s : sigowong, sunnbearo lixeð.
wuduhoht wynlic : waestmas ne dreasað.
beorhte blede, ac þa beamas a
grene stondað, swa him God bibeað.
- (h) Bearwas blostmum nimað, byrig faegriað,
wongas wlitigiað, woruld onettað :
ealle þa gemoniað modes fusne
sefan to siðe, þam þe swa þenceð,
on flodwegas feorr gewitan.
Swylce geac monað geomran reorde,
singeð sumeres weard, sorge beodeð
bittre in breosthord.

GROUP B.—Only three extracts: one at least to be from poetry.

(i) Swa lange þat si alswa swiðe abreað and adilizede þurh un-
hersamnesse, wat hit com to þa time þe god sende þe halie ætlice and hi
þa arerdon mid hare write þurh þes halie gastes gife þa god lage, and
rihtleceden þat folc swa se hi mihten, and hodeden ures hlafordes to cyme
þes helendes, þe sceolde his ægen wille þurh his gastes zife in ure heorte
write, and don us mid his mihte þat stef-creft ne mihte, and an þesser
lage of þe witzin wer laðiores moche.

(j) Innan þan ilke sea weren, un-aneomned deor summe foðer-foted,
summe al bute fet, and heore eþom scean swa deð þe leit amonge þunre ;
þas ilke nefre ne swiken to brekene þa erming licome of þa ilca men þe on
þisse live þer hare scrift enden nalden. Summe of þan monne swa deor
ludo remeð, summe þer graninde sikeð, and swiðe reowliche ilome zeizeð
and zeorne bisecheð þat me ham iburege from þam uuele pinan, þe ne
mazen iðolien.

(k) And zif me not nout, þeonne is hit zemeleste, under accidie, þet
ich cleopede slouhðe ; þe þet ne warneð oðer of his vuel, oðer of his lure,
nis hit slouh zemeleste, oðer attri onde ? Mis-iteoðeget, etholden cwide,
oðer fundles, oðer lone, nis hit ziscunge oðer poofte ? Etholden oðres
hure, over his rihte term, nis hit strong rellaç ? Oðer zif me zemeð
wurse ei þing ileaned oðer biteiht to witene, þen he wene þet hit ouh, nis
hit zemeleaste of slouhðe ?

- (l) Forr soþfastlufe baerneþþ azz,
loc ziff put mihht ohht findenn.
And whaersitt iss itt harrdneþþ all
þe gode manness heorhte,
To þolenn wiþþ fullfremedd pild
all þatt tatt iss unnsellþe.
And sone summ þin laf beþ wel
all greppedd tuss and zarrkedd,
þa mahht tu lakenn Godd wiþþ all
gastlike wel tocweme.

- (m) Brietest of wastme, and of witter wune,
 If he sag hise brøðere misfaren,
 His fader he it gan vnhillen and baren;
 He wolde ðat he sulde hem ten
 ðat he wel ðewed sulde ben;
 Forði wexem wið him grot nid,

* * *

ðat his handful stod rigt up soren,
 And here it leigen allð hem biforen;

* * *

So gan him liuen ðe prisuner
 And him de chartre haueð bitagt,
 Wið ðo prisunes to liuen in hagt.

- (n) þane þu wilt þin unriht spene,
 Loke þat hit ne beo isene;
 Vor swikedom haveþ schome and heto.
 ðif hit is ope and underzete.
 Ne speddestu nozt mid þine unwrenche,
 For ich am war, and can wel blenche;
 Ne helpþ nozt þat þu beo to þriste;
 Ich wolde vize bet mid liste;

* * *

Ae lete we awei þeos cheste,
 Vor swiche wordes beoþ unwæste;
 And fo we on mid rihte dome,
 Mid faire worde and mid isome.

GROUP C.—Any two extracts.

- (o) Schrift and fairehead schred þou right;
 Vmlapped als kleping with light,
 Strekand heven als fel with blis;
 þat hiles with watres overestes his;
 þat settes þin vpsteghing kloude,
 þat gaas over fetheres of wynde loude;
 þat makes þino aungels gastes flighand,
 And þin hine fire brinnand;
 þat groundes land over stapelnes his,
 Noght helde sal in werld of werld þis.
 Mere set þon whilk overga þai ne sal.
 Ne turne to hile þe land withal.

- (p) þe rose rayleþ hire rode,
 þe leues on þe lyhte wode
 Waxen al wiþ wille;
 þe mone mandeþ hire bleo,
 þe lilio is lossom to seo,
 þe fenyl and þe fille;
 Woves þis wilde drakes,
 Miles murgeþ huere makes,
 Ase strem þat strikeþ stille,
 Mody meneþ, so doþ mo,
 Ichot ycham on of þo,
 For lone þat likes ille.

- (q) Sleþþe zayþ 'And huet wylleþ hy do mid alle þan?' Drede zayþ
 'Ine þe b kos byþ ywrite alle þe zennen of men, and hise brengeþ þet be
 ham hi moze overcome men, of huycþen þe zennes þerinne byþ ywrite,

pet byep to hare rizte. Hokes, hi brengeþ þet þo pet byep to hare rizte
overcomeþ : hire zaulen hæ strenpe : of þe bodye drazeþ out. * * * þer
is zorze, þer is pyesternesse, þer ne is non wantrokiynge of kueade.

- (r) Al wat3 wasted þat þer wonyed þe worlde withinne
þer ever fote oþer flwe oþer on fote zede,
That rosly wat3 þe reinnaunt þat þe rac dryvez,
þat alle gendrez so ioyst wern ioyned wythinne.
Bot quen þe lorde of þe lyfte lyked hymselfen
For to mynne on his mon his meþ þat abydez,
þen he wakened a wynde on watterez to blowe ;
þenne la-ned þe llak þat large wat3 are,
þen he stac vp þe stange3 stoped þe wellez,
Bed blynne of þe rayn hit batede as fast.
þenne lased þe lo3 lowkande togoder.

2. (a) Give the meaning of *any ten* of the following, so as to explain the composition and any feature of Anglo-Saxon life any of the words may indicate :—Furhlang, Reordborend, Arfaest, Gafolgilda, Bigspell, Witherweard, Feohleas, Hagostendmann, Riltfaederen, Aerdaeg. Bonæman, Forthgesceaft, Sundorierfe, Ungerim, Ynbryno, Seledream, Giefstol, Geberscipe, Theowweall, Scieldburg, Gedwolgod.

(b) Explain *any eight* of the following :—

- (1) Eucþ a ȝetnesse of þe seli sunderlepes.
- (2) þohte he walde don hire anan ut of dahehe.
- (3) It fet ðe licham and to gost oc nowt o gevelike.
- (4) Ne gabbe þu ne schotte, ne chid þu wyþ none sotte.
- (5) And ic sal sen hiu or ic of werlde chare.
- (6) He dede it tere and ful wel pike, that it ne doutede sond ne krike.
- (7) Wel feor fram biweste to seche mine besto.
- (8) Ich neuere myȝt of reche wiþ no londisse speche.
- (9) He makede him a ful chere al bicelwode his swere.
- (10) When the bale is hest, þenne is þe bote nest.
- (11) þe crop was evening to þe rote.
- (12) Bot welthe and angre in whilk men dwelles.
- (13) And þare he made his mone playne.
- (14) And thought to cum into scowkyng, and bryng him than of daw.
- (15) In hy ane spekyng to thame mais.
- (16) Of lykyng þer woon, wondrye myȝt Salomon.

3. Answer *any two* of the following :—

(a) An eye for natural scenery and a familiarity with the sea : illustrations of these from Anglo-Saxon poetry.

(b) The main points in the controversy regarding the authorship of the poems ascribed to Caedmon.

(c) *Either* an explanation of the metre or proofs of the dialect, of *any* of the extracts in question 1.

4. Answer *any three* of the following :—

(a) Illustrations of the commoner vowel changes from Anglo-Saxon (or "Old English") to Early (or "Middle") English. Account for forms like *men*, *feet*, *woman*, *fall* being pronounced "faul," the vowel in *duck* and *bull* being pronounced differently, though written the same.

(b) The gradual decay of declensions and case-endings : and its causes.

(c) Quote or frame short sentences in Anglo-Saxon or Early English to illustrate *any six* of the following syntactical constructions :—

Nominative, Absolute, Genitive Superlative, Genitive of *cynn*, Genitive of Time, Instrumental Dative, Cognate Accusative, the Comparative of

Adjectives used as a Substantive, the Present Participle used as a Substantive, *Heira* used instead of the Genitive ending, *What* used for persons, *Do* used as a Causative, *Weorthan* used as an Auxiliary, *Of* or *Fram* used in the sense of "by."

(d) Instances of English idiom in its earliest shape still surviving in the language of common life and in slang.

(e) The claims of the Wossex and the Northumbrian dialects to the parentage of modern English, and the claims of the words "English" and "Anglo-Saxon" to indicate that parentage accurately.

(f) What is meant, respectively, by the "Anarchy of more than two hundred years" and by the "Last and Final Revolution" in the history of the English language?

5. Translate *either* into Anglo-Saxon, *or* into Early English.—

On the fourth day God made two great lights, that is the sun and the moon, and assigned the greater light to the day, and the lesser light to night. On the same day he wrought all stars and set times. On the fifth day he formed all creeping things, and the great whales, and all kinds of fish. On the sixth day he formed all kinds of beasts, and all cattle that go on four feet and the two men Adam and Eve. On the seventh day he ended his work, and the week was then done.

ENGLISH.

SECOND PAPER.

Examiner—H. M. PERCIVAL, ESQ., M.A.

1. *Either* (a) the introduction of a knowledge of Buddhism into the literature of Europe; *or* (b) the transformation it underwent therein.

2. Put together, preferably in Langland's own language, as far as possible, his most striking utterances upon *any three* of the following:—(a) Courtiers and the Court, (b) the Law and the Law Coufth, (c) the Secular Clergy, (d) the Mendicant Orders, (e) the Working Poor, (f) the Idle Classes, and the way to make them work.

3. Set forth, in your own words, the allegory in *any two* of the following:—(a) the Dinner at Reason's, (b) the Apple Tree of True Love, (c) the Marriage-Settlement of Meed, (d) the Road leading to Truth's House, the House itself, and its chief Inmates.

4. *Either* (a) the meaning to be gathered, from different passages in the Visions, of the three personages, Do Well, Do Bet and Do Best; *or* (b) the classes admitted to, and those excluded from, the benefit of Piers's Bull of Pardon.

5. Explain and annotate *any five* of the following:—

- (a) In witnesse of this thyng, Wrong was the ferste,
And Peres the pardoner of Paulynes queste;
In the date of the devel this dede ys a-sealed.
By syght of syre Symonye and Cyvyles leve.
- (b) Kynges court and comune court, constorie and shapitre,
Al shal be bote on court, and on berne be justice;—
Ac er this fortune by-falle, fynde me shal the worste,
By syx sonnes and a ship, and half a sheef of aþwes.
- (c) And Constantyn shal be here cook, and coverer of here church.

- For the abbot of Engelonde and the abbess hys nece
Shallen have a knok on here crounes, and incurable the wounde.
- (d) Gemetrie and gemensye is gynful of speche,
For sorcerye is the sovereyn bok that to that science longith,
Yet arn there febiechis of forellis of money mennes wittes,
Experimentis of alconomye of Alberdes makynge.
- (e) The pound that hue paiede hem by poysed a quarter
More than myn auncel whenne ich weied treuth.

* * * * *

- A galon or a grote and yut no grayth mesure,
Whanne it cam in coppe-mel: this craft my wif usede.
- (f) Now he hath dronke so depe, he wol deviny sone,
And proven it by here Apocalips and by the passion of saint Aveyr,
That nother bacon ne braun, blammanger ne mortreus
Ys nother fish ne flessch bote fode for penauntes.
- (g) I fynde payne for the pope and provendre for his palfrey,
And I hadde nevero of hym, have god my treuth,
Nother provendre ne parsonage yut of the popis gifte.
Save a pardonn with a peys of led, and two pollis amyddo!
- (h) Therefore by coloure ne by clergye knowe shaltow hym nevero,
Noither thorw wordes ne werkes, but thorw wille one.
For he ne is noughte in lollres ne in land-leperes heremytes,
Ne at ancre, there a box hangoth alle suche thoi faiten.
- (i) Grace gaf to Peers a teome of foure grete oxen;
And suthe Grace of hus goodnesse gaf Peers foure stottes,
Al that hus oxen ereden, thei to harwen after;
And Grace gaf to Peers greynes, cardinales vertues.
- (j) And (Lyf) gaf hym (Fisik) gold, good won, that gladede here
hertes,
And thei gaven hym agayn a glasene hove.
Lyf levyede that leche-craft lette sholde Elde,
And to-dryve away Deth with dyas and droggas.

6. Only four of the following questions, to be selected from the Group as indicated:—

GROUP A.—*Any one question.*

- (a) (1) Chaucer's own references to the titles or the subject-matter of his works; and (2) references in them to his contemporaries.
(b) Chaucer's characterisations of Birds and Trees.

GROUP B.—*Any one question.*

- (c) Chaucer's Scholarship.
(d) Wherein Chaucer is a Borrower, and wherein lies his Originality.

GROUP C.—*Any two questions.*

- (e) Chaucer's knowledge of Astronomy, or of Astrology, or of Alchemy.
(f) Internal evidences of any particular dates in the Canterbury Tales.
(g) Grounds on which the Canterbury Tales have been arranged into Groups.

(h) Discussion, in some detail, of the sources of *any one* of the Canterbury Tales.

7. Explain and annotate *any twelve* of the following:—

- (a) And eek, as helpe me God with-al
I growe hit was in the dismal,
That was the ten woundes of Egipte.

- (b) To what fyn made the God that sit so hye,
Benethen him, love other companye,
And streyneth folk to love, malgre hir hede ?
- (c) The false lapwing, ful of trecherye ;
The stare, that the counseyl can bewrye ;
The raven wys, the crow with vois of care.
- (d) Dulcarnon called is "fleminge of wrecches" ;
It semeth hard, for wrecches wol not lere
For verray slouthes or othere wilful tecches.
- (e) Tho saugh I stonde on a pileer,
That was of tinned yren cleer,
That Latin poete dan Virgyle.
- (f) For in pleyn text, withouten nede of glose,
Thou hast translated the Romance of the Rose.
That is an heresyge ageyns my lawe.
- (g) Ho hath in prose translated Boëce ;
And of the Wretched Engending of Mankinde,
As man may in pope Innocent y-finde.
- (h) And *nota*, that first moeving is cleped "moeving" of the first moevable of the 8 spere, whiche moeving is fro east to west, and eft agayn into east.
- (i) So greet a purchasour was nowher noon.
Al was fee simple to him in effect,
His purchasing mighte nat ben infect.
- (j) Ful prively a finch eek coude he pulle.
In daunger hadde he at his owne gyse
The yonge girles of the diocyse.
- (k) Nat oonly lyk the loveres maladye
Of Hereos, but rather lyk manye
Engendred of humour malencolyk.
- (l) " I smelle a loller in the wynd " quod he,
" He wolde sowen som difficultee,
Or sprengen cokkol in our clene corn."
- (m) And she that helmed was in starke stoures,
Shal on hir heed now were a vitreynyte ;
And she that bar the ceptre ful of floures,
Shal bere a distaf, hir coste for to quyte.
- (n) Ye archewyves stonde at defence,
Ne suffreth nat that men yon don offence.
And sklendre wyves fieble as in bataille,
Ay clappeth as a mille, I yow consaille.
- (o) O feeble moove, unhappy ben thy pas !
Thou knytest thee ther thou art not receyved,
Ther thou were wel, from theunes arrow weyved.
- (p) Then shewe I forth my longe cristal stones,
Ycrammed ful of cloutes and of bones ;
And in Latyn I speke a wordes fowe.
To saffron with my predicacioun.
- (q) Thise cokes, how they stampe, and streyne, and grynde
And turnen substance into accident,
To fulfille al thy likerous talent.
- (r) But certes, I suppose that Avicen
Wroot never in no canon ne in no fen,
Mo wonder signes of empoisoning.
- (s) His oversloppe nis nat worth a myte,
As in effect to him, so mot I go !
It is al bandy and to-tore also.

- (t) For ever we lakken our conclusioun,
And of my swink yet blered is myn ye,
Lo ! which avantage is to multiplie !
- (u) Lo, thus seith Arnolde of the newe toun,
" Ther may no man Mercurie mortifye,
But it be with his brother knowleching."
- (v) Thomas ! if ye wol lerne for to wirche,
Of buildinge up of churches may ye finde
If it be good, in Thomas lyf of Inde.
- (w) Lord Phebes, prayeth your suster that she go
No faster course than ye thise yeres two :
Than shal she been evene atte fulle alway.
- (x) And by his oghte spere in his wirking,
He knew ful wel how fer Alnath was shove
Fro the heed of thilke fixe Aries above.

8. Turn back *either* (a) into Chaucerian rhyming couplets, or (b) into the seven-lined stanza, scanning your version :—

- (a) Then I tell them " examples " many a one
Of old stories, long time ago ;
For ignorant people love old tales ;
Such things they can well relate and " hold."
What ? trow you that, while I may preach
And win gold and silver, because I teach
That I will live in poverty wilfully ?
- (b) Not far from that same honorable palace
Where this marquis " shaped " his marriage,
There stood a thorp, of delightful site,
In which the poor folk of that village
Had their beasts and their " harbour."
And from their labour took their sustenance
According as the earth gave them abundance.

ENGLISH.

THIRD PAPER.

Examiner—N. L. HALLWARD, ESQ., M.A.

1. Comment on any five in each section of the following passages :—

- (a) (1) When the aged year
Inclines, and Boreas' spirit blusters frore,
Beware the inclement Heavens ; now let thy hearth
Crackle with juiceless boughs ; thy lingering blood
Now instigate with th' apple's powerful streams.
- (2) Did I but purpose to embark with thee
On the smooth surface of a summer's sea ;
While gentle zephyrs play in prosperous gales
And Fortune's favour fills the swelling sails ;
But would forsake the ship, and make the shore
When the winds whistle and the tempests roar ?
No, Henry, no ; one sacred oath has tied

- Our loves : one destiny our life shall guide ;
 Nor wild nor deep our common way divide
- (3) Life is a jest, and all things show it.
 I thought so once, but now I know it.
- (4) Thy trees, fair Windsor, now shall leave their woods,
 And half thy forests rush into thy floods ;
 Bear Britain's thunder, and her cross display,
 To the bright regions of the rising day ;
 Tempt icy seas, where scarce the waters roll,
 Where clearer flames glow round the frozen pole ;
 Or under southern skies exalt their sails,
 Led by new stars, and borne by spicy gales.
- (5) O Thou, whatever title please thine ear,
 Dean, Drapier, Bickerstaff, or Gulliver,
 Whether thou choose Cervantes' serious air,
 Or laugh and shake in Rabelais' easy chair,
 Or praise the court, or magnify mankind,
 Or thy grieved country's copper chains unbind ?
 From thy Bocotia tho' her Pow'r retires,
 Mourn not, my Swift, at aught our realm acquires.
- (6) Now Chartres, at Sir Robert's levee,
 Tells with a sneer the tidings heavy :
 " Why if he dy'd without his shoes,
 Cries Bob, " I'm sorry for the news :
 " Oh, were the wretch but living still,
 And in his place my good friend Will !
 Or had a mitre on his head,
 Provided Bolingbroke were dead.
- (7) Nor be forgot a tribe who minded nought
 (Old inmates of the place) but state-affairs :
 They looked perdie, as if they deeply thought ;
 And on their brow sat every nation's cares
 The world by them is parcelled out in shares,
 When in the hall of smook they congress hold,
 And the sage berry, sun-burnt Mocha hear
 Has clear'd their inward eye : then smook enroll'd
 Their oracles break forth mysterious as of old.
- (8) For she was just, and friend to virtuous lore
 And pass'd much time in truly virtuous deed :
 And in those elfins' ears would oft deplore
 The times when Truth by Popish rage did bleed :
 And tortious death was true devotion's meed :
 And simple Faith in iron chains did mourn,
 That would on wooden image place her creed :
 And lawny saints in smouldering fires did burn :
 Ah ! dearest Lord, forfend, thilk days should e'er return.
- (9) O music, sphere-descended maid,
 Friend of pleasure, virtue's aid,
 Why, goddess why to us denied,
 Layst thou thy ancient lyre aside ?
 As in that lov'd Athenian bower
 You learn'd an all-commanding power,
 Thy mimic soul, O nymph endear'd,
 Can well recall what then it heard.
- (10) As flame ascends,
 As vapours to the earth in showers return
 As the pois'd ocean toward the attracting moon
 Swells, and the ever-listening planets, charm'd

By the Sun's call, their onward pace incline,
So all things which have life aspire to God.

- (11) Harke ! the ravenno flappos hys wynges,
In the brieded delle belowe ;
Harke ! the dothe-qwle loude dothe synge
To the nyghte-mares as heie goe ;

Mie love ys dedde,
Gone to hys dothe-bedde,
Al under the wyllowe-tree.

- (b) (1) Has Heaven reserved, in pity to the poor,
No pathless waste or undiscovered shore ?
No secret island in the boundless main ?
No peaceful desert yet unclaimed by Spain ?
Quick let us rise, the happy seats explore,
And bear oppression's insolence no more.
This mournful truth is everywhere confess'd,
" Slow rises worth by poverty depress'd.
- (2) Discipline at length,
O'erlook'd and unemploy'd, fell sick and died.
Then Study languish'd, Emulation slept,
And Virtue fled. The schools became a scene
Of solemn farce, where Ignorance in stilts,
His cap well lin'd with logic not his own,
With parrot tongue perform'd the scholar's part,
Proceeding soon a graduated dunce.
- (3) Though equal to all things, for all things unfit.
Too nice for a statesman, too proud for a wit !
For a patriot too cool : for a drudge disobedient :
And too fond of the *right* to pursue the *expedient*.
In short, 'twas his fate, unemployed, or in place, sir,
To eat mutton cold, and cut blocks with a razor.
- (4) Oh ! Syre divine, what daring spirit.
Wakes thee now ? tho' he inherit
Nor tho' pride, nor ample pinion
That the Theban Eagle bear
Sailing with supreme dominion
Thro' the azure deep of air ;
Yet oft before his infant eyes would run
Such forms, as glitter in the Muse's ray
With orient hues, unborrow'd of the sun.
- (5) Such is that room which one rude beam divides,
And naked rafters form the sloping sides :
Where the vile hands that bind the thatch are seen,
And lath and mud are all that lie between :
Here on a matted flock, with dust o'erspread,
The drooping wretch reclines his languid head
For him no hand the cordial cup applies,
Or wipes the tear that stagnates in his eyes :
No friends with soft discourse his pain beguile,
Or promise hope, till sickness wears a smile.
- (6) L—d, man, were ye but whyles where I am,
The gentles ye wad no'er envy 'em.
It's true they needna starve nor sweat
Thro' winter's cauld, or summer's heat ;
They've nae sair wark to craze their banes
An fill auld age wi' gripes and granes :
But human boddies are sic fools,
For a' their colleges and schools,

That when nae real ills perplex them,
 They mak enow themselves to vex them :
 An aye the less they have to sturt, tiffem.
 In like proportion, less will hurt them.

- (7) Drink of this cup—you'll find there's a spell in
 Its every drop, 'gainst the ills of mortality—
 Talk of the cordial that sparkled for Helen,
 Her cup was a fiction, but this is reality.
 Would you forget the dark world we are in,
 Only taste of the bubble that gleams on the top of it,
 But would you rise above earth, till akin
 'To immortals themselves, you must drain every drop of it—

- (8) Ah ! What avails the scèptred race.
 Ah what the form divine !
 What every virtue, every grace !
 Rose Aylmer, all were thine.
 Rose Aylmer, whom these wakeful eyes
 May weep, but never see.
 A night of memories and of sighs
 I consecrate to thee.

- (9) The crawling glaciers pierce me with the spears
 Of their moon-freezing crystals : the bright chains
 Eat with their burning cold into my bones.
 Heaven's winged hound, polluting from thy lips
 His beak in poison not his own, tears up
 My heart : and shapeless sights come wandering by.
 The ghastly people of the realm of dreams,
 Mocking me : and the earthquake fiends are charged
 To wrench the rivets from my quivering wounds.
- (10) Next see tremendous Thalaba come on,
 Arabia's monstrous, wild and wondrous son :
 Dondaniel's dread destroyer, who o'erthrew
 More mad magicians than the world e'er knew.
 Immortal hero ! all thy foes o'ercome,
 For ever reign—the rival of Tom Thumb !
 Since startled metre fled before thy face,
 Well wert thou doom'd the last of all thy race !
 Well might triumphant genii bear thee hence,
 Illustrious conqueror of commonsense.

- (11) Thou fair-haired Angel of the evening,
 Now whilst the sun rests on the mountains, light
 Thy bright torch of love—thy radiant crown
 Put on, and smile upon our evening bed !
 Smile on our loves : and while thou drawest the
 Blue curtain of the sky, scatter thy silver dew
 On every flower that shuts its sweet eyes
 In timely sleep. Let thy west wind sleep on
 The lake : speak silence with thy glimmering eyes,
 And wash the dusk with silver.

- (c) (1) It keeps eternal whisperings around
 Desolate shores, and with its mighty swell
 Gluts twice ten thousand caverns, till the spell
 Of Hecate leaves them their old shadowy sound.
 Often 'tis in such gentle temper found,
 That scarcely will the very smallest shell
 Be moved for days from whence it sometime fell
 When last the winds of heaven were unbound.

- (2) There was a time when, though my path was rough,
 This joy within me dallied with distress,
 And all misfortunes were but as the stuff
 Whence Fancy made me dream of happiness :
 For hope grew round me, like the twining vine,
 And fruits and foliage, not my own, seemed mine.
 But now afflictions bow me down to earth :
 Nor care I that they rob me of my mirth.
 But oh ! each visitation
 Suspends what nature gave me at my birth.
 My shaping spirit of Imagination.
- (3) Arm and up—the morning beam
 Hath call'd the rustic to his team,
 Hath call'd the falc'ner to the lake,
 Hath call'd the huntsman to the brake :
 The early student ponders o'er
 His dusty tomes of ancient lore.
 Soldier, wake—thy harvest, fame :
 Thy study, conquest : war, thy game.
- (4) Not in the lucid intervals of life
 That come but as a curse to party strife :
 Not in some hour when Pleasure with a sigh
 Of lagor puts his rosy garlands by :
 Not in the breathing times of that poor slave
 Who daily piles up wealth in Mammon's cave
 Is Nature felt, or can be.....
 Nor has her gentle beauty power to move
 With genuine rapture and with fervent love,
 The soul of Genius, if he dare to take
 Life's rule from passion craved for passion's sake.
- (5) The economy of Heaven is dark :
 And wisest clerks have missed the mark,
 Why human buds, like this, should fall
 More brief than fly, ephemeral,
 That has his day : while shrivelled crones
 Stiffen with age to stocks and stones
 And crabbed use the conscience sears
 In sinners of an hundred years.
- (6) But why do I talk of death ?
 That phantom of grisly bone,
 I hardly fear his terrible shape.
 It seems so like my own—
 It seems so like my own
 Because of the fasts I keep :
 O God ! that bread should be so dear,
 And flesh and blood so cheap.
- (7) Great are the pitiless sea-gods : but greater the Lord of
 Olympus :
 Greater the ægis-wielder, and greater is she who attends him.
 Clear-eyed Justice her name is, the counsellor, loved of
 Athénâ :
 Helper of heroes, who dare, in the God-given might of their
 manhood
 Greatly to do and to suffer, and far in the fens and the forests
 Smite the devourers of men, Heaven-hated, brood of the
 gaints,
 Twy-formed, strange, without like, who obey not the golden-
 haired rulers.

- (8) I thought once how Theocritus had sung
 Of the sweet years, the dear and wished-for years,
 Who each one, in a gracious hand, appears
 To bear a gift for mortals, old and young,
 And as I mused it, in his antique tongue,
 I saw, in gradual vision through my tears,
 The sweet sad years, the melancholy years.
 Those of my own life, who by turns had flung
 A shadow across me. Straightway I was 'ware
 So weeping, how a mystic shape did move
 Behind me, and drew me backward by the hair,
 And a voice said in mastery, while I strove :
 " Guess now who holds thee ? " " Death," I said.
 But there
 The silver answer rang : " Not Death, but Love."
- (9) So silent all, you well might deem
 'Twas midnight on the verge of morn ;
 But for the smoky's dim silvery wreath
 From yon low-nestling cot upborne.
 Such dewy breathings of delight,
 Who dearly love, and deeply scan
 May trace in every summer night
 Heaven teaching earth to comfort man.
- (10) He heard the deep behind him, and a cry
 Before. His own thought drove him like a goad.
 Dry clasp'd his harness in the icy caves
 And barren chasms, and all to left and right
 The bare black cliff clang'd round him, as he based
 His feet on juts of slippery crag, that rang
 Sharp-smitten with the dint of armed heels.
- (11) But in the interval here the boiling pent-up water
 Frees itself by a final descent, attaining a basin,
 Beautiful, most of all, where beads of foam uprising
 Mingle their clouds of white with the delicate hue of the still-
 ness.
 Cliff over cliff for its sides, with rowan and pendent birch-
 boughs.
 Here it lies, unthought of above at the bridge and the pathway,
 Still more enclosed from below by wood and rocky projection.
 You are shut in, left alone with yourself and the goddess of
 bathing.

2. Give some account of the poems from which any five in each section of the foregoing passages are taken, and of the authors.

Answer any two of the following questions :—

3. Discuss and illustrate the characteristics of the Augustan Age of English poetry.

4. " And Love's own strain to him was given,
 To warble all its ecstasies
 With Pythian words unsought, unwill'd—

* * * * *

Nor skilled one flame alone to fan
 His country's high-souled peasantry
 What patriot pride he taught !—how much
 To weigh the inborn worth of man !
 And rustic life and poverty
 Grow beautiful beneath his touch.

Him, in his clay-built cot, the Muse
Entranced, and show'd him all the forms
Of fairy light and wizard gloom,

* * * * *

The Genii of the floods and storms,
And martial shades from Glory's tomb."

Explain the allusions in this passage and illustrate them as far as you can.

5. The romantic revival was "A revolt against convention both in art and society."

Illustrate this dictum from English poetry of the latter half of the eighteenth century and of the earlier half of the nineteenth.

6. Sketch briefly and criticise any two poems which are eminently characteristic of the Victorian Age.

7. "Byron was the first English poet since Milton to enjoy a Continental reputation."

Discuss the significance of this fact, and illustrate your answer by quotation.

ENGLISH.

THIRD PAPER.

DRAMA.

(OPTIONAL PAPER.)

Examiner--N. L. HALLWARD, ESQ., M.A.

1. Annotate any five in each section of the following passages :—

(a) (1) *M. Merygreeke.*

And ye will not believe what they say in the streete,
When your maship passeth by all such I meete,
That sometimes I can scarce finde what answere to make.
Who is this (sayth one) for Launcelot du lake ?
Who is this, greate Guy of Warwike, sayth an other ?
No (say I) it is the Thirteenth Herecules' Brother.
Who is this ? noble Hector of Troy, sayth the thirde ?
No, but of the same nest (say I) it is a birde.
Who is this ? greate Goliah, Sampson, or Colbrande ?
No (say I), but it is a brute of the alike land.
Who is this ? greate Alexander ? or Charle le Maigne ?
No, it is the Tenth Worthie, say I to them agayne.

(2) *Ferrex.*

The wreakful gods pour on my cursed head
Eternal plagues and never-dying woes,
The hellish prince adjudge my damned ghost
To Tantale's thirst, or proud Ixion's wheel,
Or cruel Gripe to gnaw my growing heart,
To during torments and unquenched flames,
If ever I conceived so foul a thought
To wish his end of life, or yet of reign.

(3) *Fancy.*

Now benedicite ! Ye ween I were some hafter,
Or else some jangling jack of the vale :
Ye ween I am drunken because I look pale.

Magnificence. Me seemeth ye have drunken more than bled.

Fancy.

By God, sir, ye see few wise men of mine age ;
But courtesy hath blown you so full of wind
That *colica passio* hath griped you by the guts.

Felicity.

I'faith, brother Largesse ! you have a merry mind.

Fancy.

I'faith, I set not by the world two Doncaster cuts.

Magnificence.

Ye want but a wild flying bolt to shoot at the butts.
Though Largesse ye hight, your language is too large.

(4) *Poticary.*

Thou by thy travail thinkest heaven to get ;
And thou by pardons and relics countest no let
To send thine own soul to heaven sure,
And all other whom thou list to procure.
If I took an action, then were they blank :
For like thieves they rob away my thank.
All souls in heaven having relief,
Shall they thank your crafts ? Nay, mine, chief :
No soul, ye know, entereth heaven gate
Till from the body he be separate :
And whom have ye known die honestly
Without help of the Poticary ?

(5) *Alexander.*

Two loving worms, Hephestion ! I perceive Alexander
cannot subdue the affections of men, though he conquer
their countries. . . . Thou shalt see that Alexander
maketh but a toy of love, and leadeth affection in fet-
ters ; using fancy as a fool to make him sport, or a min-
strel to make him merry. . . It is children's game, a life for
sempstresses and scholars : the one pricking in the clouts
. . . the other picking fancies out of books.

(6) *Hieronimo.*

Light me your torches at the mid of noon,
When as the sun-god rides in all his glory ;
Light me your torches then.
Then we burn daylight.
Let it be burnt ! Night is a murderous slut,
That would not have her treasons to be seen
And yonder pale-faced Hecate there, the moon,
Doth give consent to that is done in darkness.
And all those stars that gaze upon her face,
Are aglets on her sleeve, pins on her train :
And those that should be powerful and divine,
Do sleep in darkness when they most should shine.

(7) *Edward.*

Forgive my thought, for having such a thought !
One jewel have I left, receive thou this !

O, if thou harbour'st murder in thy heart,
Let this gift change thy mind, and save thy soul !
Know that I am a king : O at that name
I feel a hell of grief. Where is my crown ?
Gone, gone, and do I still remain alive ?

Lightborn.

You're overwatched, my lord ! lie down and rest.

(8) *Bacon.*

Miles !

Thou knowest that I have dividè into Hell
 And sought the darkest palaces of fiends :
 That with my magic spells great Belcephon
 Hath reft his lodge and kneelèd at my cell :
 The rafters of the earth rent from the poles,
 And three-formed Luna hid her silver locks
 Trembling upon her concave continent
 When Bacon read upon his magic book.
 With seven years tossing necromantic charms,
 Poring upon dark Hecat's principles,
 I have framed out a monstrous Head of Brass.

(9)

Mistress Allwit. O you are at too much charge, Sir !*Second Gossip.* Look, look, what has he given her ? What is't. gossip ?*Third Gossip.* Now, by my faith, a fair high standing-cup

And two great 'postle spoons, one of them gilt.

First Puritan. Sure, that was Judas then with the red beard.*Second Puritan.* I would not feed

My daughter with that spoon for the world,
 For fear of colouring her hair ; red hair
 The brethren like not, it consumes them much ;
 'Tis not the sisters' colour.

(10) *Frankland.*

O God ! O God ! that it were possible
 To undo things done : to call back yesterday !
 That Time could turn up his swift sandy glass,
 To untell the days and to redeem these hours !
 Or that the sun
 Could, rising from the west, draw his coach backward,

that I might take her

As spotless as an angel in my arms !

But oh ! I talk of things impossible,

And cast beyond the moon.

(11) *Andelocia.*

'Twas never merry world with us since purses and bags
 were invented, for now men set lime-twigs to catch
 wealth : and gold, which riseth like the sun out of the
 East Indies, to shine upon every one, is like a cony taken
 napping in a pурсenet, and suffers his glistening yellow-
 face deity to be lapped up in lambskins, as if the inno-
 cency of those leather prisons should dispense with the
 chevril consciences of the iron-hearted gaolers.

Shadow.

Snudges may well be called gaolers : for if a poor wretch
 steal into a debt of ten pound, they lead him straight to
 execution.

(12) *Cockledemoy.*

But brothers, brothers, you must think of your sins and
 iniquities : you have bin a brocher of proflane vessels ;
 you have made us drink of the juice of the whore of
 Babylon : for whereas good ale, perrys, bragoes, syder,
 and metheglins, was the auntient British and Trojan
 drinks, you ha brought in Popish wines, Spanish wines,
 French wines, *tam Marti quam Mercurio*, both muscadin,
 and malmsey, to the subversion, staggering, and some-
 times overthrow of manie a good Christian.

(b) (1) *Iago.*

Ay there's the point : as,—to be bold with you,—
 Not to affect many proposed matches
 Of her own clime, complexion, and degree,
 Whereto we see in all things nature tends :—
 Foh ! one may smell in such a will most rank,
 Foul disproportions, thoughts unnatural,—
 But pardon me ! I do not in position
 Distinctly speak of her ; though I may fear.
 Her will, recoiling to her better judgment,
 May fall to match you with her country forms
 And happily repent.

(2) *Cordeha.*

Had you not been their father, these white flakes
 Had challenged pity of them. Was this a face
 To be opposed against the roaring winds ?
 To stand against the dread deep-bolted thunder ?
 In the most terrible and nimble stroke
 Of quick cross lightning ? to watch—poor perdu !—
 With this thin helm ? . . And wast thou fain, poor father,
 To hovel thee with swine, and rogues forlorn,
 In short and musty straw ?

(3) *Romeo.*

O my love ! my wife !
 Death that hath suck'd the honey of thy breath,
 Hath had no power yet upon thy beauty :
 Thou art not conquer'd : beauty's ensign yet
 • Is crimson on thy lips, and in thy cheeks,
 And death's pale flag is not advanced there.—
 Tybalt, liest thou there in thy bloody sheet ?
 O what more favour can I do to thee
 Than with that hand that cut thy youth in twain
 To sunder his that was thy enemy ?

Ferdinand.

(4) *Miranda.* Do you love me ?
 O heaven ! O earth ! bear witness to this sound
 And crown what I profess with kind event,
 If I speak true ! If hollowly, invert
 What best is boded me to mischief ! I
 Beyond all limit of what else i' the world
 Do love, prize, honour you.

(5) *Sir Toby.*

Go, write it in a martial hand : be curst and brief ; it is
 no matter how witty, so it be eloquent and full of inven-
 tion : taunt him with the license of ink ; if thou thou'st
 him some thrice, it shall not be amiss ; and as many
 lies as will lie in thy sheet of paper, although the sheet
 were big enough for the bed of Ware in England, set 'em
 down : go, about it. Let there be gall enough in thy
 ink, though thou write with a goose-pen, no matter :
 about it.

(6) *Coriolanus.*

You common cry of curs ! whose breath I hate
 As reek o' the rotten fens, whose loves I prize
 As the dead carcasses of unburied men
 That do corrupt my air, I banish you.
 Have the power still
 To banish your defenders ; till at length
 Your ignorance, which finds not till it feels,

Making not reservation of yourselves,
Still your own foes, deliver you as most
Abated captives to some nation
That won you without blows !

- (7) *Corbaccio.* Well,
I shall prevent him yet. See, Mosca, look,
Here have I brought a bag of bright cecchines
Will quite weigh down his plate.

Mosca.

Yea, marry, sir.

This is true physic, this your sacred medicine ;
No talk of opiates to this great elixir !

Corb.

'Tis aurum palpabile, if not potable.

Mos.

It shall be ministered to him in his bowl.

- (8) *Crawford.*

'Tis more than strange : my reason cannot answer
Such argument of fine imposture, couched
In witchcraft of persuasion, that it fashions
Impossibilities, as if appearances
Could cozen truth itself : this dukeling mushroom
Hath doubtless charmed the king.....

Dalyell.

.....How the counsel privy
Of this young Phaethon do screw their faces
Into a gravity their trades, good people
Were never guilty of ! the meanest of 'em
Dreams of at least an office in the state.
Sure, not the hangman's : 'tis bespoke already
For service to their roguiships.

- (9) *Bellario.* My father would oft speak
Your worth and virtue and, as I did grow
More and more apprehensive, I did thirst
To see the man so praised, but yet all this
Was but a maiden longing, to be lost
As soon as found, till sitting in my window,
Printing my thoughts in lawn, I saw a God,
I thought (but it was you) enter our gates.
My blood flew out, and back again as fast
As I had puff'd it forth, and suck'd it in
Like breath.

.....Never was a man
Heaved from a sheepcot to a sceptre, rais'd
So high in thoughts as I.

- (10) *Wellborn.* No house ? nor no tobacco ?

Tapwell.

Nor a suck, Sir :
Not the remainder of a single can
Left by a drunken porter, all night palled too.

Froth.

Not the dropping of the tap for your morning draught, Sir :
'Tis verity, I assure you.

Well.

Verity, you brache !

Tap.

The devil turned precisian ! Rogue, what am I ?

Troth, durst I trust you with a looking-glass,
To let you see your trim shape, you would quit me,
And take the name yourself.

- (11) *Flamíneo.* Wither shall I go now ? O Lucian, thy ridiculous purgatory to find Alexander the Great cobbling shoes, Pompey tagging points, and Julius Cæsar making hair-buttons ! Hannibal selling blacking, and Augustus crying garlick ! Charlemagne selling lists by the dozen, and king Pepin crying apples in a cart drawn with one horse !

Whether I resolve to fire, earth, water, air,
Or all the elements by scruples, I know not,
Nor greatly care.—Shoot, shoot ! .

(12) *Lorenzo.*

Methinks the duke should feel me now : is not
His soul acquainted ? Can he less than tremble,
When I lift up my arm to wound his counterfeit ?
Witches can persecute the lives of whom
They hate, when they torment their senseless figures,
And stick the waxen model full of pins.
Can any stroke of mine carry less spell
To wound his heart, sent with as great a malice ?
He smiles, he smiles upon me ! I will dig
Thy wanton eyes out, and supply the dark
And hollow cells with two pitch-burning tapers :
Then place thee porter in some charnel-house
To light the coffins in.

(c) (1) *Elder Brother.*

Some say no evil thing that walks by night
In fog, or fire, by lake or moorish fen,
Blue meagre hag, or stubborn unlaid ghost
That breaks his magic chains at curfew time,
No goblin, or swart faery of the mine,
Hath hurtful power o'er true virginity. .

What was that snaky-headed Gorgon shield
That wise Minerva wore, unconquer'd virgin
Wherewith she freez'd her foes to congeal'd stone,
But rigid looks of chaste austerity,
And noble grace that dash'd brute violence
With sudden adoration and blank awe ?

(2) *Pedro.* So, here's fine work !

He has supplied his only foe with arms
For his destruction. Old Penelope's Tale
Inverted : he has unravelled all by day
That he has done by night. What, planet-struck !
Alphonso. I wish I were : to be past sense of this !

P. Would I had but a lease of life so long
As till my flesh and blood rebelled this way,
Against our sovereign lady ; mad for a queen ?
With a globe in one hand, and a sceptre in t'other
A very pretty moppet !

(3) *Prettyman.* I shall have another coyn for thee ; for
now the wars come on, I shall grow to be a man of mettall.

Bayes. O you did not do that half enough.

Johnson. Methinks he does it admirably. .

B. I, pretty well : but he does not hit me in't : he does not top
his part.

Thimble. That's the way to be stamped yourself, Sir. I shall see you
come home, like an Angel for the King's evil, with a hole
bored through you.

B. That's very good, i' faith : ha, ha, ha. Ha, there he has hit it
up to the hilts, I gad. How do you like it now, gentlemen ?
is not this pure wit ?

Smith. 'Tis snip snap, Sir, as you say : but, methinks, not pleasant
to the purpose, for the play does not go on.

(4) *Prink.*

Home, and be humble, study to retrench !

Discharge the lazy vermin of thy hall,
 Those pageants of thy folly :
 Reduce the glittering trappings of thy wife
 To humble weeds, fit for thy little state,
 Then to some suburb cottage both retire :
 Drudge, to feed loathsome life ; get brats and starve.
 Home, home, I say.

(5) *Antony.*

Lie there, thou shadow of an emperor ;
 The place thou pressest on thy mother-earth
 Is all thy empire now : now it contains thee :
 Some few days hence, and then 'twill be too large,
 When thou'rt contracted in thy narrow inn,
 Shrunk to a few cold ashes : then Octavia—
 For Cleopatra will not live to see it—
 Octavia then will have thee all her own,
 And bear thee in her widowed hand, to Cæsar.

(6) *Samson.*

Weakness is thy excuse,
 And I believe it—weakness to resist
 Philistian gold : if weakness may excuse,
 What murderer, what traitor, parricide,
 Incestuous, sacrilegious, but may plead it ?
 All wickedness is weakness : that plea, therefore,
 With God or man will gain thee no remission.
 But love constrained thee ! Call it furious rage
 To satisfy thy lust : Love seeks to have love ;
 My love how could'st thou hope, who took'st the way
 To raise in me inexpiable hate.

(7) *Almeria.*

How reverend is the face of this tall pile,
 Whose ancient pillars rear their marble heads
 To bear aloft its arched and ponderous roof,
 By its own weight made steadfast and immovable
 Looking tranquillity. It strikes an awe
 And terror on my aching sight ; the tombs
 And monumental caves of death look cold,
 And shoot a chillness to my trembling heart.

(8) *Lady Froth.*

For as the sun shines every day,
 So of our coachman I may say,
 He shows his drunken fury face
 Just as the sun does, more or less.
Brisk. That's right ; all's well, all's well. *More or less.*
Lady F. And when at night his labour's done,

Then, too, like heaven's charioteer, the sun—
 Ay, charioteer does better—
 Into the dairy he descends,
 And there his whipping and his driving ends ;
 There he's secure from danger of a bilk ;
 His fare is paid him, and he sets in milk.

Brisk.

For Susan, you know, is Thetis, and so—
 Incomparable well and proper, egad ! But I have one excep-
 tion to make : don't you think *bilk*—I know it's a good
 rhyme—but don't you think *bilk* and *fare* too like a hackney
 coachman ?

(9) *Boniface.* Sir, I have now in my cellar ten tun of the best
 ale in Staffordshire : 'tis smooth as oil, sweet as milk, clear

P.R.S. EXAMINATION.

as amber, and strong as brandy, and will be just fourteen years old the fifth day of next March, old style.

Aimwell. You're very exact, I find, in the age of your ale.

Bon. As punctual, sir, as I am in the age of my children : I'll show you such ale. Here, tapster, broach number 1706, as the saying is, Sir, you shall taste my anno domini. I have lived in Lichfield, man and boy, above eight and fifty years and I believe have not consumed eight-and-fifty ounces of meat.

Aim. At a meal, you mean, if one may guess by your bulk.

Bon. Not in my life, sir : I have fed purely upon ale : I have ate my ale, drunk my ale, and I always sleep upon my ale.

(10) *Justice.* So ! there's the morning and afternoon pretty well disposed of. Pray, how, madam, do you pass your evenings ?

Sir John Bruce. Like a woman of spirit, sir : a great spirit. Give me a box and dice. Seven's the main ! Oons, sir, I set you a hundred pound ! Why, do you think women are married now-a-days to sit at home and mend napkins ? Oh ! the Lord help your head !

Justice. Mercy on us, Mr. Constable ! What will this age come to ?

Constable. What will it come to indeed, if such women as these are not set in the stocks.

(11) *Cato.* Portius, draw near ! My son, thou oft hast seen
 Thy sire engaged in a corrupted state,
 Wrestling with vice and faction : now thou seest me
 Spent, overpowered, despairing of success :
 Let me advise thee to retreat betimes
 To thy paternal nest, the Sabine field,
 Where the great Censor toiled with his own hands,
 And all our frugal ancestors were blest
 In humble virtues and a rural life.
 There live retired : pray for the peace of Roma :
 Content thyself to be obscurely good.

2. Give some account of the context of any five in each section of the foregoing passages and of the plays from which they are taken.

Answer any two of the following questions :—

3. Write a critical appreciation of Ben Jonson as a dramatist.

4. " No poet has at once so truly depicted and so highly exalted the female sex as Shakespeare." Illustrate the truth of this dictum by examples drawn from any of the plays with which you are familiar.

5. Discuss the significance of Shakespeare's historical plays from Richard II to Richard III.

6. The Restoration drama differed from the Elizabethan " not only in its moral tone, but quite as widely in its literary form."

Illustrate and account for this difference.

ENGLISH.

FOURTH PAPER.

Examiner—N. L. HALLWARD, ESQ., M.A.

Write an essay on *any one* of the following :—

1. "In the treatment of literature the proposition which seems to stand most in need of assertion at the present moment is, *that there is an inductive science of literary criticism.*"

Explain and illustrate what is meant by inductive criticism as applied to (a) poetry, or (b) drama; and consider how far the judicial method of criticism still prevails with regard to either of these.

2. Compare the origin of English drama with that of Greek tragedy.

3. Estimate and account for the decline of English poetry which ensued for a century after the death of Milton.

4. Describe the position of the stage in the Elizabethan theatre, showing how the stage arrangements differed from those of a modern theatre. Discuss the effect of this difference upon the form of dramatic art.

5. Write a critical appreciation of the poetry of (a) Blake, or (b) Keats.

SANSKRIT.

FIRST PAPER.

Examiner—MAHAMAHOPADHYAY HARAPRASAD SASTRI, M.A.

The figures in the margin indicate full marks.

1. Differentiate between ध्वनि and चक्षुःस्पर्श and illustrate your meaning by examples.

Or

State reasons which induce Alaṅkārikas to admit a third शक्ति 10 as byāñjanā.

2. Name the four Dramatic Vṛttis, define them and give example 8 of each.

Or

State various definitions given of Nidārśanā and Samāsokti. Which definitions do you prefer and why?

3. Translate into English with critical notes :—

20

(a) (अप्रतोज्ज्वलकोऽयं) अयमसौ भगवत्याः विम्बोर्ध्वरितेरथातस्तद-

प्रपातः ।

यत्रत्य इह तुमुसो ध्वनिरम्बगर्भं

गम्भीरदूतैः स्तानेतप्रचक्षते ।

पथ्यन्तसूधरनिकुसुविजृम्भमाख्यो
हैरम्भकच्छरचितप्रतिमानमेति ।

एताश्च चन्दनाक्षकर्मक्षेत्रपाठलाप्रायतत्तदगहनाः पारंथतभापर-सुर-
मयोऽरखगिरिभूमयः स्मारयन्ति खलु तस्मिन्करम्भजम्भूतनावनद्वान्-
कारगुनिकुसुगम्भीरगच्छरोद्गारगोदावरीमुखरितस्त्रिधावेगालने ला
सुवो दक्षिणारखसूधरान् । अयञ्च मधुमतीसिन्धुसंभेदपावनो भगवान्
भवानीपतिरपौरुषेयप्रतिष्ठः सुवर्षविन्दुरित्याख्यायते ।

(b) देव यथा सुगंया द्योपकारिकी न तथान्यत् । अत्र हि व्यायामो-
द्भासितसूक्ष्मदर्शी दीर्घाञ्चलङ्कनसमो जङ्गलजवः कफाघचयादारोग्येक
मूलमाश्रयाग्निदीप्तिः भेदोपकर्षादङ्गनां श्वेद्यकाकर्षातिलाघवादीनि,
श्रीतोष्णवातवर्षक्षत्पिपासासहत्वं सत्त्वानामवस्थान्तरेषु चित्तचेष्टितज्ञानं
हरिणगत्रलगवयादिवधेन सखलोपप्रतिक्रिया वृकव्याघ्रादिघातेन स्थल-
पथग्रन्थग्रोधनं श्रीलाट्वीप्रदेशानां विविधकर्मक्षमांशामालोचनम्
आठविकवर्गविश्रमनम् वरसाहशक्तिसंयुक्तयेन प्रत्यनीकवित्रासनमिति
बहुतमाः गुणाः ।

(c) नीतोच्छ्रायं सुदूरगिरिरश्मेरुखे
रानीलाभैर्विरचितपरभागारत्नैः ।
ज्योत्स्नाशंकाभिह वितरति हंसश्रीनौ
मये पण्डः स्फटिकरजतभित्तिच्छाया ॥

(d) अङ्गुलपातिनमचच्छगातं
किरता सुगन्धिमभितः पवनम् ।
अवधीरितार्तवर्णं सुखता-
द्वयता रुचां निचयमंशुमतः ॥

(e) भो भो अस्तदृशेनभयद्वलितकाम्मुककृपाणतोमरशस्त्रः कौरव-
चक्रमटाः पाण्डवपक्षपातिनो योधाः न मेतव्यं न मेतव्यं अयमहं निह-
ततुःशासनपीठरोहःस्थलसतजासवपानकोटुसोरणभभगामी स्तोकाव-
शिष्टप्रतिज्ञाभिहोत्सवः कौरवराजस्य द्यूतनिर्जितो दासः पाण्डवमध्यमो
भीमसेनः सर्वान्भवतः बाह्यीकरोमि, अयताम् ।

राक्षोमानघनस्य कार्मुकभूतः दुर्योधनश्चाग्रतः
प्रत्यहं रुदान्दवस्य मिततः कर्षणे शस्त्रस्य च ।

पीतं तस्य मयाद्य पाण्डववधू-नेत्राम्बराकषिणः

कोष्ठां जीवत एव तीक्ष्णकरजः श्वादिभ्यस्तस्यः ॥

4. Write a short essay on the geography of India as revealed in the Dasakemaracharita. 6

Or

Write an essay on the system of education in vogue at that time. 9

5. Describe the simultaneous appearance of the six seasons in the tenth canto of the Kirātayjuniya and compare it with similar descriptions in Sanskrit Literature.

6. Compare the temptation scenes in the Kirata with those in the Lalitavistara and other accounts of Buddha's Life. 10

Or

Criticise the theory that Benisamhara is the most perfect production of Dramatic Art in Sanskrit Literature. In what vṛtti is it written? Define that vṛtti and show that the Benisamhara conforms to it. 7

7. Give in Sanskrit the plot of the Mālatimādhava. 15

Or

Describe in English the state of society in Bhavabhūti's time.

8. Write a short history of the Pāṇini School of grammar and say in what main points Patanjali differs from Pāṇini. 10

Or

Quote the sūtras of Pāṇini on the reduplication of roots.

9. Define तादर्थ्यं. Quote the Sūtra of Pāṇini which indicates that चतुर्थी is the consequence of तादर्थ्यं. What are the incidents of तादर्थ्यं चतुर्थी. 15

Conjugate the root कृ in कृत् and कृड्. What would be its यङ्ग and यङ्गुयङ्ग forms?

How would you account for the चतुर्थी in मलानयनाय.

Derive the words इव श्री जीव and प्रफुल्ल. Account for the sixth case-ending in कमलस्य कन्दः.

Derive the word भिदुर in तिमिरभिदुरं बोधः प्रदं.

SANSKRIT.

SECOND PAPER.

Examiner—MAHAMAHOPADHYAY CHANDRAKANTA TARKA-
LANKAR.

द्वितीयपत्रं ।

संस्कृतभाषयोक्तं राशिं लेख्यानि ।

प्रत्येकप्रश्नचतुष्कमध्यात् द्वयोर्द्वयोः प्रश्नयोस्तत्राणि लेख्यानि ।

१ । देवतादिप्रतिपादनस्य तु स्ववाक्यगतोपासनार्थत्वेऽपि न कश्चिद्वि-
रोधः । न तु तथा ब्रह्मण्य उपासनाविधिशेषत्वं सम्भवति एकत्वे द्वेयोपादेय-
भूततया क्रियाकारकाद्वैतविज्ञानोपमर्दोपपत्तेः, — इत्ययं सन्दर्भो विग्रही-
कृत्य व्याख्यायतां । किमुपपन्नेनोत्थितोऽयं सन्दर्भः ? न कश्चिद्विरोध इति कस्य
दोषस्य सम्भावना आसीत् कथं च स दोषोऽधुना न भवति ? अपरोक्षवैत-
विज्ञानस्य अपरोक्षैकत्वविज्ञानेनोपमर्दोवाच्यः । एवञ्च, प्रागपरोक्षैकत्ववि-
ज्ञानात् ब्रह्मण्य उपासनाविधिशेषत्वं कथं न भवति ? कथमन्यथा ब्रह्मोपास-
नायां गुणोपसंहारचिन्ता संगमयितव्या ?

२ । आदित्योपपन्नं इत्यादिवत् अहं ब्रह्मास्मीत्याद्यभेदनिर्देशप्रसङ्गोप-
पत्तेः अङ्गे फलश्रुतेरर्थवादरूपतया भिद्यते । हृदयग्रन्थिरित्यादिफलश्रुतेः प्रसङ्गः
ब्रह्मात्मज्ञानमाध्यावेक्षणादिवत् कर्तृसंस्काररूपं कथं न भवति ? मोक्षस्य
स्वात्मस्वरूपत्वेऽपि विस्मृतकण्ठचासीकरवत् कथं वा नाप्यत्वं ?

३ । ननु श्रुतब्रह्मणोऽपि यथापूर्वं संसारित्वदर्शनात् न रज्जुस्वरूप-
कथनवदवर्थवस्त्वमित्युक्तं । अत्रोच्यते । नावगतब्रह्मात्मभावस्य यथापूर्वं
संसारित्वं शक्यं दर्शयितुं । वेदप्रमाणजनितब्रह्मात्मभावविरोधात्, — इत्ययं
सन्दर्भो विग्रहीकृत्य व्याख्यायतां । साक्षात्कृतब्रह्मात्मभावस्य यथापूर्वं संसा-
रित्वाददर्शनेऽपि श्रुतब्रह्मणो यथापूर्वं संसारित्वं दृश्यत एवेति कथमनेनोत्तर-
ग्रन्थेन शङ्काग्रन्थस्य निराकरणं ?

४ । एष एव च तर्णविषयस्य भेदप्रत्ययस्य बाधकः प्रत्ययो यत्प्रत्यभि-
ज्ञानं । कथं तर्णकाले ब्रह्मनामुच्चारयतामेक एव सन् गकारोयुगपदने-
करूपः स्यात् उदात्तज्ञानुदात्तश्च स्वरितज्ञानुनासिकश्च निरनुनासिकश्च, —
इतीमं सन्दर्भं विग्रहीकृत्य बोधय । तर्णविषयोभेदप्रत्ययः कौदृशः ? खूनपुन-

जातकोशादौ भेदेऽपि तस्यासौ कोशा इति प्रत्यभिज्ञानदर्शनात् प्रत्यभिज्ञानस्य कथं भेदप्रत्ययबाधकत्वं ? 'उदात्तादिप्रत्ययः किमालम्ब्यनाः वर्णं वा कथं ते प्रतीयन्ते ?

१ । असत्येन स्वप्नदर्शनेन सत्यस्य फलस्य समुद्धेः प्राप्तिं दर्शयतीत्यनेन स्वप्नदर्शनासत्यत्वमुक्तं । यद्यपि स्वप्नदर्शनावस्थस्य सर्पदर्शनोदकस्नानादि कार्यमनृतं तथापि तदवगतिः सत्यमेव फलमित्यनेन स्वप्नदर्शनस्य सत्यत्वमुक्तं । तदत्र पूर्वोपरविरोधः कथं समाधेयः ?

२ । अनाधेयातिशयस्य पुरुषस्य भोगासम्भवात् अपवर्गस्य प्रधानप्रवृत्तेः प्रारूपि सिद्धत्वाच्च सांख्यमतं प्रत्याख्यातं । वेदान्तिमतेऽपि पुरुषस्यानाधेयातिशयत्वात् कथं भोगः ? मुक्तेरात्मत्वात् या नित्यसिद्धत्वात् कथमपवर्गार्थाप्रवृत्तिः ?

३ । चतुर्विधान् चेतून् प्रतीत्य धित्तचेत्ता उत्पद्यन्तु इति कस्य प्रतिज्ञा ? अस्याः प्रतिज्ञाया इति कया रीत्या उपपादिता ? के नाम चतुर्विधा चेतवः ? का तेषां प्रतीतिः ? के वा हेतवः ? किञ्चिदुदाहरणमुपन्यस्य सर्वं विशदीकृत्य बोधनीयं ।

४ । प्राणानामुत्पत्तिरस्ति न वा ? अस्ति चेत्, प्राणुत्पत्तेः प्राणसङ्भाव-
अवयवं कथमुपपादनीयं ? नास्ति चेत्, एकविज्ञानेन सर्वविज्ञानप्रतिज्ञा कथमुपपादनीया ?

५ । पृथिव्यादौ हिंकारादिबुद्धिः कर्तव्या हिंकारादौ वा पृथिव्यादि बुद्धिः ? किं तत्र कारणं ?

६ । को नाम नित्यानुवादः ? किं तस्योदाहरणं ?

७ । विद्यावतो मोनं विधीयते न वा ? किं तत्र कारणं ? किं वेदं मोनं नाम ?

८ । परमात्मनोऽहमिति आद्यत्वे को दोषा आशङ्किताः ? कानि तेषां सुतराणि ?

SANSKRIT.

THIRD PAPER.

Examiner—MAHAMAHOPADHYAY CHANDRAKANTA TARKA-
LANKAR.

‘तृतीयपत्रं ।

संस्कृतभाषा प्रश्नानामुत्तराणि संस्कृतभाषया लेख्यानि ।

१ । तदात्मानमेवावेत्, - इत्यत्रात्मशब्दस्य कोऽर्थः कया रीत्या निर्यीतः ? तदात्मानमेवावेत्, - इति, न विज्ञातेर्विज्ञातारं विजानीया इति ज्ञानयोः श्रुत्योर्विरोधः कथं समाधेयः ? यद्यात्मानं विदितवद्ब्रह्म, नूनं विज्ञातेर्विज्ञातारं विज्ञातवत् । अथ तु विज्ञातेर्विज्ञातारं न विज्ञातवत्, नूनमात्मानं न विदितवत् । किमस्योत्तरं ?

२ । काभिर्युक्तिभिर्मोक्षस्य निरभिसम्बिनित्यकर्मफलत्वमाशङ्कितं ? काभिर्वा युक्तिभिस्तदाशङ्का निराकृता ? मोक्षस्य निरभिसम्बिनित्यकर्मफलत्वाभावे, “येषां पुनर्नित्यानि निरभिसम्बन्ध्यात्मसंस्कारार्थानि क्रियन्ते, तेषां ज्ञानोत्पत्त्यर्थानि तानि ब्राह्मीयं क्रियते तनुरित्यादिस्मरणेन, तेषामारोप-कारकत्वात् मोक्षसाधनान्यपि कर्माणि भवन्ति” - इत्युक्तिः कथं नाशङ्कता ?

३ । ब्रह्मज्ञानानन्दशब्दप्रयोगात् संवेद्ये च सुखे तस्य प्रसिद्धेः एकत्वे विज्ञानप्रतिषेधाच्च ब्रह्मस्य आनन्दत्वं कया रीत्योपपादनीयं ? युक्तप्राप्यात्मनो दुःखित्वानुपपत्तिर्वा कया रीत्या समर्थिता ?

४ । आत्मेत्येवोपासीत, - इत्यत्र ‘इति’ - परात्मशब्दप्रयोगात् मनो-ब्रह्मेत्युपासीत इतिवत् आत्मबुद्ध्या अनात्मोपासनं वाक्यसार्थं भवति न वा ? वाक्यस्यात्मोपासनार्थत्वे वा आत्मानमेव लोकमुपासीत इत्यनेन कथं न पौन-स्त्यं ? का चेयमुपासना नाम ?

(एतेषां मध्ये प्रश्नद्वयस्योत्तरं लेख्यं ।)

१ । चन्द्रमण्डलादवरोहतां मनुष्यजन्मप्राप्तिपुर्यन्तं सविज्ञानत्वमवि-ज्ञानत्वं वा ? सविज्ञानत्वे महती कष्टप्राप्तिरिष्टादिकारिणां भवेत् । अवि-ज्ञानत्वे अर्धिरादिना धूमादिना च गमनेऽपि तथात्वं भवति न वा ? किञ्चा-वरोहतामविज्ञानत्वे तेषां क्लेशानुभवस्याभावात् कथं तदुपवर्णनेन वैराग्य-सिद्धिः ?

२ । आत्मशब्देनात्माऽभिधीयते न वा ? अभिधीयते चेत्, यतोवाचो-

निवर्तन्ते इति श्रुतिविरोधः । नाभिधीयते चेत्, तत् सत्यं च आत्मा इत्याद्यु-
पदेशानुपपत्तिः । किमस्योत्तरं ? पक्षद्वयेऽपि कारणमुपन्यस्य चिद्धान्तो-
त्तरणीयः ।

३ । बीजोपमं अक्षरो जायमानो दृष्टोऽभावादेवेति मतं कया रीत्या
वृषितं भाष्यकारेण ? उपमर्दानुपपत्तिर्वा कया रीत्या समर्थिता ? सतः
सदुत्पत्तौ वा का उपपत्तिः ?

४ । प्राचीनशालादयः के कस्युपगम्य वैश्वानरमात्मानं पृष्टवन्तः ? पृष्टेन
च तेन कौदृशो वैश्वानर आत्मा तेभ्य उपदिष्टः ? कौदृशं पृथग् वैश्वानरोपासनं
कौदृशं वा अपृथग् वैश्वानरोपासनं ? कस्योपासनस्य किं फलं ?

(एतेषां मध्ये प्रश्नद्वयस्योत्तरं लेख्यं ।)

१ । स्वप्ने आत्मनः स्वयं ज्योतिष्त्वं कया रीत्या प्रतिपादितं ? स्वप्नेऽपि
मनसः सत्त्वात् तेनैव विषयोपलब्धिसम्भवात् कथमात्मनः स्वयं
ज्योतिष्त्वसिद्धिः ?

२ । प्रजापतिः पर एव वा स्यात् संसारी वा ? किं तत्र कारणं ?

३ । सत्यपुरुषशब्दयोः का व्युत्पत्तिरादर्शिता ?

४ । कहलप्रश्नं तदुत्तरञ्च विशदीकृत्य बोधय ।

(एतेषां मध्ये प्रश्नद्वयस्योत्तरं लेख्यं ।)

SANSKRIT.

FOURTH PAPER.

ESSAY.

Examiner—MAHAMAHOPADHYAY HARAPRASAD SASTRI, M.A.

The figures in the margin indicate full marks.

Write an essay in Sanskrit on any two of the following subjects :—

1. The Vedānta System of Hindu Philosophy : its inception in Vedic Samhitas, development in the Upanisads, reduction in the shape of Sūtras. The Bhagavadgita : its chronological position in the history of Vedānta, the connection of the Ajivakas with the Vedānta System, early commentaries on the Sūtras, Saṃkarācārya, Ramanuja, Mādvācārya and Vallava. The position of the Vedas at every stage and in every school of Vedānta.

2. The Nyāya Sūtras : their author, their heterogeneous character, their followers. The Buddhist system of logic : how it differs from the Hindu system ; Vātsāyana, Udyotakara, Dignāga, Vacaspati. The amalga-

mation of the Nyāya School with the Vaiśeṣika School and the history of the Amalgamated School.

3. Sanskrit Grammar. Vedāṅga works on Vyākaraṇa. Development of special schools. Universal grammar—Pāṇini, Kātyāyana, Vyādi, Patanjali. Revival of Pāṇini School by Bhartṛhari—why necessary? Recasts of Pāṇini—when first made and why? The last recast and the present position of Pāṇini School.

4. The Indian Drama. Its antiquity. Its origin. Its relation with Greek stage. Bharata. The Nāṭyaśāstra. The stage. The various forms of Drama. The dramatic art of the Hindus. Principal dramatic works. Kālidāsa and Bhavabhūti.

5. Rāsas. The earliest work in which they are treated. Their development from Bhāvas. Their number-classification. Is the number arbitrary? The various Rāsaśāstras. Examine any Sanskrit poem pointing out the development of Rāsas in it.

6. The theory of atoms. How proved? Who first promulgated it? Who are its supporters? and who its opponents? How the various opponents of the theory refute it. How do again the supporters meet the objections?

7. The history of the systematic treatises of Hindu Law from the compilation of Manusmṛiti down to the Codification by Jagannath Tarkapañchanana.

LOGIC AND MENTAL PHILOSOPHY.

FIRST PAPER.

Examiner—DR. P. K. RAY, D.Sc.

N.B.—Candidates should give their answers in their own words as far as possible.

Only two questions to be answered from each group.

GROUP A.

1. Is the problem of Inductive Logic identical with that of Scientific Investigation? Fully discuss the question.

2. State as clearly as you can Mill's proof of the "Law of Universal Causation," and examine, from his point of view, the objections which have been raised against it.

3. Explain and criticise:—

"The laws of causation are hypothetical not merely in their logical form in so far as they state that if *A* is true *B* is also true; nor yet merely in the sense that their unconditionally universal validity is only of the nature of a probable hypothesis, not of a strictly proven proposition: they are also hypothetical in the sense that they refer to instances which are assumed although they are forthcoming in no experience."

4. Distinguish the different aspects of Logic and fully discuss the question of the relation of Logic to Metaphysics.

GROUP B.

5. State clearly what you understand to be the problem of Hegel's Logic and give a critical exposition of his method and results.

6. State and examine the grounds on which Hegel abolishes the Kantian distinctions (1) of form and matter, and (2) of phenomenon and non-phenomenon.

7. Explain and criticise Hegel's conception and derivation of the following Categories :—(1) Being, (2) Naught, (3) Becoming, (4) Quality, (5) Measure.

8. Hegel professes to be an empiricist and a phenomenalist. Distinguish his Empiricism from that of the English School, and his Phenomenalism from that of the Kantian School.

LOGIC AND MENTAL PHILOSOPHY.

SECOND PAPER.

MENTAL PHILOSOPHY.

Examiner—H. STEPHEN, ESQ., M.A.

N.B.—Only SIX questions are to be answered, including at least one, but not more than two, from each of groups B and C.

A.

1. The unity of mind : in what does it consist ? In what sense, and on what grounds, has it been denied ? Discuss the question.

2. The localization of mental functions : meaning, grounds, and present state of the question.

3. "Consciousness is not an independent entity, but an active state of nervous substance" : the meaning, implications, and validity of this statement.

4. The relation between emotion and organic sensation.

5. The relation of belief to feeling and volition. "Belief will and ought to be affected by the character of its object" : examine this.

6. The idea of energy : its contents, origin, and bearing on freedom of will.

B.

7. Spencer's theory of the nature and origin of intelligence, and its place in the development of the world : explain and estimate.

8. The differentiation of subject and object in thought, and their objective reality, according to Spencer.

9. "Spencer's system is an inconsistent combination of dogmatism and scepticism" : the import, grounds, and validity of this judgment.

C.

10. That there is "an originaive function of reason, of which no natural history can be given" : the meaning and grounds of this principle, and its place in the history of philosophy.

11. "The understanding makes nature but does not create it" : the meaning, grounds and philosophical significance of this.

12. "We often talk of reading the book of nature, and there is a real analogy here": the psychological and metaphysical grounds and significance of this.

LOGIC AND MENTAL PHILOSOPHY.

THIRD PAPER.

HISTORY OF PHILOSOPHY.

Examiner—H. STEPHEN, ESQ., M.A.

N.B.—Only six questions are to be answered, two from each group.

A.

1. Hegel's theory of the development and history of thought.
2. The doctrine of Protagoras, with its philosophical consequences and reappearances in history.
3. Aristotle's theory of forms: its meaning, origin, and philosophical significance.
4. The Academies: the general tendencies of their teaching, and its relation to Plato. In what sense did Hume claim to revive the Academic philosophy?
5. Nominalism: its meaning and philosophical consequences.

B.

6. "Volition and intellect are one and the same thing" (Spinoza): the meaning, grounds, and philosophical significance of this.
7. "Every individual is a reproduction of the universe"; the meaning of this conclusion of Leibnitz, and the reasoning by which he arrives at it.
8. Herbert's theory of apperception, and its bearing on education.
9. The nature and significance of æsthetic feeling in the system of Hegel.
10. Comte's law of intellectual development: explain and examine.

C.

11. How the Mādhyamika Buddhists criticised the idea of substance and the theory of universals: explain, and give analogies from European thought.
12. Gotama's theory of the Good and its attainment.
13. The Sankhya theory of causation and the consequences to which it leads.

LOGIC AND MENTAL PHILOSOPHY.

. . . FOURTH PAPER.

Examiner—DR. P. K. RAY, D.Sc.

N.B.—Candidates should give their answers in their own words as far as possible.

Only two questions to be answered from each group.

GROUP A.

1. Explain Aristotle's conception of (1) Psychology, (2) the Human Soul, and (3) the relation of the soul to the body,
2. Give a critical exposition of Aristotle's theory of "a common or central sense."
3. Give an account of Aristotle's treatment of the subject of Recollection in its nature, its forms and its causes.
4. Explain and criticise:—
"Reason is of such character that on the one hand it becomes all things and on the other creates all things, in this respect resembling a property like light."

GROUP B.

5. In the preface to the second edition of the "Critique of Pure Reason," Kant says:—
"The only thing which might be called an addition though as the method of proof only, is the new refutation of Psychological Idealism, and the strict (and as I believe the only possible) proof of the objective reality of external phenomena."
Give a critical account of the new refutation of Idealism and the sure method of proof of Realism.
6. Explain and examine the grounds on which Kant establishes the distinction between "things as objects of experience and the same things by themselves."
7. Explain and criticise Kant's distinction of Sense, Understanding and Reason, and give a critical exposition of his conception of the causality of Reason.
8. State as clearly as you can what you understand to be the problem of Kant's Transcendental Logic, and give a critical exposition of his method and results.

GROUP C.

9. State the problem of Philosophy as conceived by Kapil and give an appreciative account of his method and results.
10. Give a critical account of Kapil's conception of Prakriti and state the arguments by which he establishes its reality and eternity.
11. Compare Kapil's theory of the relation of the soul to Nature with the theories of European philosophers.
12. Compare Kapil's theory of the liberation of the soul with the doctrine of perfection as the highest good.
13. Give a critical account of the ultimate test of truth, and the different kinds of proof, recognised by Indian philosophers.

MORAL PHILOSOPHY AND NATURAL THEOLOGY.

FIRST PAPER.

Examiner—DR. P. K. RAY, D.Sc.

N.B.—Candidates should give their answers in their own words as far as possible.

Only TWO questions to be answered from each group.

GROUP A.

1. Discuss the question of Intuition *versus* Dialectic as the proper method of knowing God. Is any reconciliation possible?
2. State and examine the grounds on which Kant holds in his "Critique of Pure Reason" that God cannot be known.
3. Give a critical account of Martineau's method of proving God as Cause, and compare his theory of the relation of God to Nature with the Vedantic theory of the relation of Brahman to the universe.
4. Give a critical account of Caird's theory of the relation of the finite mind to God and compare it with the Vedantic theory of the relation of the Individual self to Brahman.

GROUP B.

5. Explain and criticise :—
"Though the Absolute cannot in any matter or degree be known in the strict sense of knowing, yet we find that its positive existence is a necessary datum of consciousness; that so long as consciousness continues, we cannot for an instant rid it of this datum; and that thus the belief which this datum constitutes, has a higher warrant than any other whatever."
6. State the arguments for and those against attributing personality to God. Is any reconciliation possible?
7. Give a critical account of Spencer's theory of the Ego and Nonego and of their relation to the Absolute, and compare it with Martineau's theory.
8. Explain and examine Spencer's theory of the origin and development of Consciousness, and compare it with the theory of Hegel.

MORAL PHILOSOPHY AND NATURAL THEOLOGY.

SECOND PAPER.

MORAL PHILOSOPHY.

Examiner—H. STEPHEN, ESQ., M.A.

N.B.—Only SIX questions to be answered, three from each group.

A.

1. Explain the meaning of personality. "Full personality is possible only in God": explain and estimate this statement.

2. Reason gives law to itself : the meaning, implications, and validity of this principle.
3. The relation between the pleasurable and the desirable : the psychology of this question, and its ethical bearings.
4. "The destiny of man cannot be fulfilled in this life" : the grounds and implications of this statement.
5. The relation between the morally good and the æsthetically beautiful, and between moral and æsthetic judgment.
6. Character : its meaning, origin, and relation to freedom of will.

B.

7. "Right and wrong are simple ideas incapable of analysis" : explain and examine this.
8. "Good-doing is disguised self-interest" : explain this statement, indicate the grounds on which it is based, and examine its validity.
9. Society is an organism, and morality is its product : explain and estimate this theory.
10. "Justice is the free realization of self by self" : the meaning and grounds of this, and its bearing on the theory of socialism.
11. "I see and approve the better, but I follow the worse" : the psychological and ethical implications of this, with historical references.
12. That Green's theory of the good involves a vicious circle : the grounds and validity of this charge.

MORAL PHILOSOPHY AND NATURAL THEOLOGY.

THIRD PAPER.

HISTORY OF PHILOSOPHY.

Examiner—H. STEPHEN, ESQ., M.A.

N.B.—Only SIX questions are to be answered, two from each group.

A.

1. Anticipations of the theory of evolution in Greek and Indian philosophy.
2. The Platonic theory of the Good : its meaning, origin and philosophical significance.
3. Aristotle's conception of God, with the reasoning by which he arrived at it, and Indian analogies.
4. The Stoic principle of "life according to nature" : its meaning and ethical significance.
5. The fundamental ideas of Plotinus, and their theological significance.

B.

6. "Nothing is, but everything becomes" : the meaning, grounds, and philosophical significance of this.
7. The theory that mind is at first a *tabula rasa* : its meaning and philosophical significance, with historical references.

8. The meaning of individual and individuation, and Leibnitz's principle of individuation. Does the Vedānta philosophy supply any principle of individuation?

9. Fichte's conception of God, and the charge of atheism brought against him.

10. The views of Kant and Spencer as to the relation of science and religion.

C.

11. The theistic argument of Gotama, and Kapila's criticism of it.

12. The *vidyā* of Indian thinkers and the Christian *faith*: explain, compare, and give philosophical implications.

13. The knowledge and nature of Ego and World according to the Gōgāchāras, with modern analogies.

MORAL PHILOSOPHY AND NATURAL THEOLOGY.

FOURTH PAPER.

Examiner—DR. P. K. RAY, D.Sc.

N.B.—Candidates should give their answers in their own words as far as possible.

Only two questions to be answered from each group.

GROUP A.

1. Give a critical exposition of Plato's conception of Justice as a virtue of the Individual and of the State.

2. Compare the Dialectic of Plato with that of Hegel as regards their aim, method and results.

3. Explain Plato's distinction of the visible and intelligible worlds, and describe, after him, the progress of the soul from a contemplation of the former to a knowledge of the latter.

4. Explain and criticise:—

“And there is an absolute beauty and an absolute good, and of other things to which the term “many” is applied there is an absolute; for they may be brought under a single idea, which is called the essence of each.”

GROUP B.

5. Explain and criticise Kant's distinction between Speculative and Practical Reason. What services does the former render to the latter? How does Practical Reason solve the problem of the Unconditioned, left as insoluble by Speculative Reason?

6. Explain and criticise:—

“Nothing can possibly be conceived in the world, or even out of it which can be called good without qualification except a good Will.”

7. What, according to Kant, is the relation of Will to Reason? Give a critical exposition of his conception of Free Will.

8. Explain and criticise Kant's method of demonstrating that there is Pure Practical Reason, and that God, Freedom and Immortality are its postulates.

GROUP C.

9. "Scriptural text, etc., are not in the enquiry into Brahman, the only means of knowledge, as they are in the enquiry into active duty (*i.e.*, in the Pârna Mimâmsâ), but scriptural texts on the one hand, and intuition, etc., on the other hand, are to be had recourse to according to the occasion; firstly because intuition is the final result of the enquiry into Brahman; secondly because the object of the enquiry is an existing (accomplished) substance."

Fully explain the above and institute an inquiry to determine the nature and function of Intuition in the Vedantic system.

10. Explain and criticise :—

"The Vedantic opinion that the intelligent Brahman is the material cause of the world is untenable because the effect would in that case be an altogether different character from the cause."

11. Give a critical account of the doctrine of Mâyâ as a great power of Brahman.

12. "But if Brahman is generally known as the self, there is no room for an enquiry into it! Not so, we reply; for there is a conflict of opinions as to its special nature."

State the views of the different Indian Schools in regard to the nature of the Self. Compare them with the views of the leading European Schools and defend the view which appears to you to be the most satisfactory.

HISTORY.

FIRST PAPER.

Examiner—A. VENIS, ESQ., M.A.

Only SEVEN questions to be answered, and to be selected from the groups in the manner indicated.

Candidates are free to employ Sanskrit and Pali when dealing with original documents.

GROUP A.—Any three questions.

1. Describe the subject-matter of the Yajur and Sama Vedas, showing the relation of each to the Rig Veda. How is the Arthava Veda important for a history of Indian civilization?

2. The origin of caste according to Hindu authorities; and the struggle between the Brahmans and Kshatriyas as recounted in early times.

3. Comment on the names of the Kshatriya tribes which the Manu Smriti describes as having sunk to the condition of Sudras. Examine the inferences as to the antiquity of the Smriti itself which are based on the mention of these tribes.

4. The source and the extent of kingly power as set out in the Mahabharata and Manu Smriti. Explain :—"A king should do what is for his good, imitating a kokila, a boar, the mountains of Meru, an empty chamber, an actor and a devoted friend."

5. Summarize the teaching of the Manu Smriti in regard to (a) the

laws of castes, families and countries ; (b) the method of judicial investigation ; (c) the degrees of punishments.

6. Furnish a chronological statement of the Greek invasions of India ; and also a general estimate of the extent of their influence.

GROUP B.—Any four questions.

7. Discuss the grounds for identifying the Piyadase of the monuments with the Asoka of literature.

8. What light do these monuments throw on the history of Buddhism ? In this regard consider more especially the references to the conversion of the King and to the Brahmins.

9. Indicate the extent of Asoka's Empire ; and write notes on the names of the kings and peoples mentioned in the Edicts.

10. Attempt a *chronological* list of the Inscriptions, supporting it with reasons.

11. Are there grounds for supposing that Asoka was acquainted with the Pali Literature of Buddhism ? Explain fully the terms :—mahamatra, dharmamahamatra, rajjuka, pradesika, anusamyana.

12. Consider the explanations that have been proposed for the numerals 256 found in some of the Edicts of Asoka.

13. Write on (a) the different dialects, and (b) the different scripts employed in Asoka's inscriptions, and (c) the grouping of the inscriptions according to their dialects.

14. The life of Kanishka, and his part in the development of Buddhism as a religion. Refer to your authorities as far as possible.

HISTORY.

SECOND PAPER.

Examiner—A. VENIS, Esq., M.A.

Only SEVEN questions to be answered, and to be selected from the groups in the manner indicated.

Candidates are free to employ Sanskrit and Pali, when dealing with original documents.

GROUP A.—Any four questions.

1. Viewing the Buddhist Period as a " Special Subject " or field for historical research, within what chronological limits would you confine it, and on what grounds ?

2. Briefly review the evidence on which it is claimed that the epoch of the Gupta Era has been finally settled.

3. Draw a sketch map to show the extent of the Gupta Empire about 400 A.D. Describe, after Fahien, the administration of Chandragupta Vikramaditya.

4. Deal fully with the evidence that has been adduced for a so-called Hindu Reaction during the Gupta Period in the fields of religion, literature and architecture.

5. Reproduce the historical materials, and the inferences based thereon

which may be drawn from any *four* of the Inscriptions here named :—(a) Bhitari Pillar of Skandagupta ; (b) Junagadh Rock of Skandagupta ; (c) Apsad Inscription of Adityasena ; (d) Bodh-Gaya Inscription of Mahanama ; (e) Copperplate of Dharmasena II of Valabhi.

6. The part taken by the Huns in the history of India ; together with a connected account of Toramana and Mihirakula. Refer to the authorities on which you rely. Remark on the forms of these proper names.

7. The relations between the Gupta kings and the Western Satraps ; and the sources of information in regard thereto.

8. Summarize the reign of Harshavardhana. Indicate the extent of his Empire. Discuss the identification of Harsha Siladitya with the Siladitya of Mo-la-p'o mentioned by Hsien Tsang.

GROUP B.—Any three questions.

9. The information supplied by Hsien Tsang as to (a) Indian castes and marriage customs ; (b) commerce and administration of justice ; (c) Buddhist Schools, their books and their discipline.

10. Write historical notes on the names of *four* persons and *four* places which are mentioned by Chinese Pilgrims and whose equivalents in Sanskrit or Pali now appear to be beyond all doubt.

11. A brief account of the Andhrabhrytas and the Early Chalukyas : with mention of the authorities on which you depend.

12. Alberuni as a critical historian ; and the picture he draws of the political and religious India of his own time.

13. Write geographical and historical notes on the following :—Aornos ; Ahichhatra ; Bairat ; Barabar ; Dhamek ; Jtjakabhukti ; Kasia ; Kosambi ; Khajuraho ; Mahoba ; Nalanda ; Pawa ; Sravasti ; Taprobane ; Taxila ; Vaisale.

14. Comment on the following terms as employed under the feudal system of Rajasthan :—Charsa ; Faujdar ; Gola ; Grasya Thakur ; Rekwali ; Rozina.

HISTORY.

THIRD PAPER.

Examiner—DR. J. V. RYAN, B.A., LL.D.

N.B.—Candidates should give their answers in their own words as far as possible.

TEN questions only to be answered.

Ten marks will be allotted to each question.

1. What are Mill's general views on the policy of " Laissez-faire " ? What exceptions does he admit ?

2. Discuss the relative merits and demerits of loans and taxation as a means of defraying public expenditure.

3. What is the Currency Theory ? Examine its defects.

4. Write a note on the monetary system of the United States of America, with particular reference to the Bland Bill and ' Sherman Act.'

5. Write a note on the Bank of England—its establishment and status, with particular reference to the Bank Act of 1844.

6. Describe and explain the incidence of (1) a tax on the sale of land, (2) a tax on raw produce, (3) a tax on rent, (4) a land tax proportionate to rent, (5) a land tax proportionate to acreage, (6) a house tax.

7. What are the views of Adam Smith and Ricardo as to bounties on exportation?

8. Jevons offers 'a curious conclusion in which the keystone of the whole theory of exchange and of the principal problems of Economics lies.' What is this conclusion? Criticise it.

9. What is the physiocratic doctrine regarding the growth of population? What are Adam Smith's views on the subject? Enumerate the arguments of Malthus, and criticise them in view of modern conditions.

10. What effect has the introduction of machinery on the specialization of industries? What are the comparative advantages of production on a large and production on a small scale?

11. Examine the proposition, "Rent does not enter into the cost of production," What are Adam Smith's views on the subject?

12. What are the comparative effects to consumers of (1) a tax, (2) a bounty on commodities which obey the law of constant, diminishing, and increasing return respectively?

13. Explain and criticise Mill's proposition, "A demand for commodities is not a demand for labour."

14. What is the Economic Theory of Rent? Write a note on the extent to which it is or is not applicable to Indian tenures. Upon what assumption is the doctrine based?

15. Sketch the causes (dating from the 18th century) which have led to the present economic conditions of England. Why (according to Marshall) has England not reaped the full benefit of modern improvement in manufactures?

16. "*These causes conspired with the undeveloped state of knowledge and of social relations in giving to the economic life of the ancients the limitation and monotony which contrast so strongly with the inexhaustible resource, the ceaseless expansion, and the thousandfold variety of the same activities in the modern world.*" Expand the words in italics.

17. "The history of modern Economics is sometimes represented as consisting of the successive rise and reign of three doctrines." Explain this and criticise briefly the earlier doctrines.

18. Give some account of the methods of the German Historical School of Economists. Who were the founders of the School? What are the two points which, according to Ingram, are open to criticism in the position taken by some economists of this School, and what is his criticism?

19. Examine the fallacies inherent in the popular belief that the general reduction of the hours of labour would effect a general rise in wages.

20. Give short accounts of the doctrine of any four of the following—St. Simon, Fourier, Proudhon, Comte, Bastiat, Carl Marx, List, Lassalle, Manchester School, Socialists of the chair.

HISTORY.

FOURTH PAPER.

Examiner—DR. J. V. RYAN, B.A., LL.D.

N.B.—Candidates should give their answers in their own words as far as possible.

Ten marks will be allotted to each question.

GROUP A.

THREE questions only to be answered.

1. Give a brief sketch of Plato's ideal state.
2. Describe the system of communism advocated by Plato. Give a brief outline of Aristotle's criticism of this, and the alternative which he proposes.
3. Give a sketch of the origin and rise of representative democracy. Contrast the system with the ancient democratic state.
4. Contrast the ancient, Teutonic, and modern ideas of 'nationality.' What are the various systems of determining nationality? Mention a country by which each has been adopted. What are the different ways in which nationality may be acquired?
5. What are the main principles which govern the relation of the State to private property?
6. What are the various speculative theories which from time to time have been advanced as to the origin of the state? Criticise and comment on each of these briefly.

GROUP B.

Only TWO questions to be answered.

7. Explain 'national character,' and 'domicile,' and distinguish between the two. With regard to what matters is the question of domicile of vital importance? What are the rules regarding the fixing of domicile of (1) a legitimate child, (2) an illegitimate child, (3) a married woman? Can domicile be changed either by the act of the individual or by the operation of law? If so, how?
8. What is the International position of the Suez Canal? Give an outline of the terms of the last convention, and mention the subscribing Powers.
9. Explain 'pacific blockade' and 'droit d'angarie,' and give examples. Also explain 'eminent domain,' 'droit d'aubain,' 'droit de détraction,' 'King's chambers,' 'marine league.'
10. Mention the points which were involved in the cases of the following vessels—Charkieh, Exchange, Huascar, Emily St. Pierre, Peterhoff, Alabama, Caroline, Springbok, Trent, Tuscarara.

GROUP C.

Only TWO questions to be answered.

11. Maine says: "Almost every gesture and almost every set of formal words in the *Legis Actio Sacramenti* symbolise something which in some part

of the world or another, in some Aryan Society or another, has developed into an important institution." Illustrate and explain this.

12. What were the three earliest stages of state interference in civil actions? Trace the historical development of the remedies which grew out of the practice of violent seizure of property in redress of supposed wrong.

13. Describe the various forms which the government of a dependency may assume in relation to the dominant government. Give examples of each.

14. What control does the Imperial Government exercise over Colonial legislation, and to what extent does it possess and exercise the right of itself legislating for the Colonies?

GROUP D.

Only THREE questions to be answered.

15. Describe, in general terms, the relationship of the Imperial Government to Native States, and their mutual obligations.

16. Write a note on the Permanent Settlement of Bengal and its effects.

17. Describe the circumstances which led to the stoppage of free coinage of silver in India, and the object and effect of the measure.

18. What are the limitations to the legislative powers of the Government of India and Local Government.

19. What was the general line of policy adopted by the East India Company towards the Independent States of India from the time of Clive to that of Cornwallis? What was the reason for this policy? By what policy was it succeeded, and what further change of policy took place after 1857.

20. "The Indian Native States, for the purpose of International Law, occupy a very special and exceptional position." Explain this.

COMPARATIVE PHILOLOGY.

FIRST PAPER.

Examiner—HARINATH DE, Esq., M.A. (CAL. AND CANTAB.).
M.R.A.S.

Not more than SIX questions to be attempted, of which at least ONE should be taken from each section.

A.

1. Write a brief essay on the "Origin of language."

2. What are the principles of the present "Göttingen school" of philologists?

3. Sketch succinctly the principal theses in Indo-Germanic phonology on which discussion has been rife during the last few years.

4. What is meant by the relative chronology of language? Show its linguistic importance and fully illustrate it from any languages known to you.

B.

1. Give a careful definition of *Ablaut*. Show by examples from modern English or French what kinds of force produce the phenomena.
2. Differentiate the various phenomena included under the term 'accent.' Inquire into the nature and origin of the Greek *circumflex* and *gravis* and the Lithuanian '*Schleifton*.'
3. What do you understand by 'Verner's Law'? Illustrate its working with apposite examples.
4. Examine the evidence deducible from (a) accent; (b) order of words; (c) connecting words, touching the existence of subordinate sentences in the primitive Indo-Germanic.
5. Carefully examine the position of Greek in relation to its nearest neighbours in the Indo-Germanic family, considering how far the several dialects within the Greek area approximate to those neighbours in details of phonology.
6. Give a brief account of the languages of Ancient Italy which existed side by side with Latin.

C.

1. Describe fully the structural resemblances between the Italic and the Celtic families of languages. Are there reliable links of the same kind in the case of Italic and Greek?
2. "When we compare the various Teutonic dialects, we find certain characteristics which show that they have a common origin, and by which they are distinguished from the other branches of the Aryan languages." Illustrate this statement with examples.
3. "Another instance of the good offices exchanged between the Rig Veda and the Assyrian Inscriptions is in the story of the Asura Sambara. Indra is said to have fought and conquered him, and by the sack of his capital to have acquired the surname of Purandar. Sambara is constantly mentioned in the Rig Veda, but without any clue to his identification. In one hymn, however, he is distinguished by the patronymic Kaulitara, or the son of Kulitara. But this only raised our curiosity, and then tantalized us by making our darkness visible. We have again had recourse to the Cuneiform Inscriptions. We find there a 'Kiliteru, son of Kaliteru,' in the reign of Tiglathpileser I, in the 12th century. We may venture to say that Sambara, from his patronymic, was, if not identical with one or other of the characters there named, at least a connexion of one or of both, and, being thus a contemporary of Tiglathpileser I, proves a synchronism between his reign and the composition of the Vedas, which must be historically of great value."

So wrote in 1875 the Rev. K. M. Banerjea. Prove from your own study that this unwarranted assertion runs counter to the famous dictum of Max Müller that "Sound Etymology has nothing to do with sound."

4. Illustrate the following statements:—
 - (a) "Dialectic differences always imply original unity."
 - (b) "The best European illustration of Chinese syntax is to be found in our Flat noun-phrase!"
5. 'A history of civilization on a basis of comparative philology is a chimera.' Defend or criticize this condemnation of Linguistic Palæontology with reference to the question of a common Indo-Germanic knowledge of (1) metals, (2) agriculture.
6. Write a brief essay on the philological work, done by the Sanskrit grammarians.
7. What do you understand by the word '*Paṭi*' as applied to the language which goes by that name? Explain the dictum: "arisavayane siddham devānam Addhamāgahā vāṇi."

8. Who was Anquetil Duperron ? Compare his work and that of Sir William Jones with reference to the philological importance of their productions.

COMPARATIVE PHILOLOGY.

SECOND PAPER.

Examiner—HARINATH DE, ESQ., M.A. (CAL. AND CANTAB.),
M.R.A.S.

Not more than EIGHT questions are to be attempted, and not more than FIVE from either group.

A.

1. What are the chief contributions to the science of Comparative Philology associated with the names of Bopp, Verner and Johannes Schmidt ?

2. What is meant by the term 'synthetic language' ? It has sometimes been suggested that the long compounds of the Sanskrit constitute a reversion from that type. Can you point to any features of the later Sanskrit and Indian syntax which may be ascribed to the adoption of a synthetic language by peoples having originally other habits of speech ?

3. Instance from Sanskrit or any Anglo-Indian dialects the employment of adverbs and case-forms as pre- or post-positions. Account for the cases governed by them and mention some primitive Indo-European prepositions having the appearance of case-forms.

4. State Brugmann's classification of compounds. Illustrate the use of special suffixes and declensional and conjugational forms in the first member ; also any relations between compounds and phrases.

5. Illustrate from any Indo-European languages the employment of accent to distinguish meanings of words. Discuss the antecedents of the Greek system of accentuation. Explain the accent of *οἶκος* and any noticeable feature of ablaut in *ἀστὴρ*.

6. Discuss the following equations :—

patruus = πατήρ = pítṛvya,

heri = χεῖρ = hyás

ursus = ἄρκτος = rkṣa,

7. Discuss the formation of the stem of the comparative and its variation in declension. Account for the suffix in : γυνῆς = janunās ; nomina = ὀνόμας = namani ; senāya, nobis = ἡμῖν = asmasu.

8. Discuss the effect of reduplication in words and verb-stems. What meaning would you attach to the perfect ? Does any special force reside in such forms as the Sanskrit *śasāha*, or in any of the suffixes whereby present stems were formed in the Ursprache ? Distinguish the force of the tense stem in *εἰπὶ*, γινώσκω *gacchati*.

9. Explain the following expressions and give instances :—

(a) Phonetic laws ; (b) Analogy ; (c) Contamination. Give a few instances of sounds which have different developments under different conditions.

10. Explain any five of the following terms with instances :—

(a) the Indeterminate Vowel ; (b) Anaptyctic Vowel ; (c) Anastrophe ; (d) Changed Division ; (e) Compensation ; (f) Crasis ; (g) Deaspiration ; (h) Epenthesis ; (i) Prothesis and (j) Rhotacism.

B.

1. Briefly characterise the several groups of languages which constitute the so-called Semitic family, indicating their exact geographical distributions.

2. Write a note on the language called Pehlevi and discuss its relation with the Semitic languages.

3. Briefly state the arguments for the inclusion of the old Egyptian language in the Semitic group.

4. Discuss the origin of the Semitic alphabet; stating briefly the theories of Rougé, Deceke, Delitzsch, Jensen, Evans and Lizbarski.

5. Give a brief account of the earliest monuments of the most important Canaanite dialect. State also the linguistic peculiarities which are to be found in the inscription of King Mēša.

6. Write out the Phœnician alphabet with the corresponding Hebrew and Arabic equivalents. Point out the indebtedness of the so-called Kharosthi script to it.

7. Trace the influence of sound-shifting in the Semitic languages, giving examples from Hebrew, Chaldee and Arabic.

8. Discuss and exemplify the formation of cases in the Semitic languages.

9. Name and exemplify, giving in each case the corresponding Hebrew or Arabic equivalents, the six conjugations with their secondary forms which are in use in Assyrian.

10. Adduce instances of Metathesis and *Sandhī* in the Semitic languages.

COMPARATIVE PHILOLOGY.

THIRD PAPER.

Examiner—HARINATH DE, ESQ., M.A. (CAL. AND CANTAB.),
M.R.A.S.

Not more than EIGHT questions are to be attempted and not more than FIVE from the same group.

A.

1. Explain and comment on any peculiar forms in the following Latin inscription:—

IO VEI SA^r DEIVOS QOI MED MITAT NEI TED ENDO
COSMIS VIRCO SIED ASTED NOISI OPE TOITESIAI PAKARI
VOIS DVENOS MED FECED EN MANOM EINOM DVENOI NE
MED MALO STATOQ.

2. Write philological notes on the underlined words in the following Gothic extract:—

qimai thiudinassus theins; . . . ðlaif unsarana thana sinteinan gif
uns himma daga jah aflet uns thatei, skulans sijaima.

3. Give a short history of the following letters of the Greek and Latin alphabets:—

(a) Greek H, Ξ.

(b) Latin C, X, Y, Z, the numeral signs, Q.

4. From what Indo-European letters do the following Latin letters come :—

b, i, g, r, u, c. . j

5. 'Greek is nearer to the Mater language, than Latin is with respect to its Vowels.' Show, by instance, that this is not always the case.

6. What do you know about the early and later 'Accent' (in its widest sense) ? Give examples of its effects.

7. Define the 'Aeolic' dialect, and mention its chief features, comparing it with Latin, as far as possible.

8. In what forms might the following words be found on an early Latin Inscription ? Write a few notes—

(a) dabunt malum Metelli Naevis poetae ;

(b) Philippus maximi aestimavit ;

(c) Lucius Gnaeo natus, cuius fama virtuti parissima fuit, cum Romae adesset, aedem Iunoni posuit ;

(d) ut facillime figi possit.

9. Decline or conjugate side by side Gothic *days, harjis, ik, thu, mag, wisan* and the corresponding OE. words.

10. Translate into Gothic :—

(a) And he asked them, How many loaves have ye ? And they said. Seven.

(b) And the apostles said unto the Lord, Increase our faith.

(c) And when ye stand praying, forgive, if ye have aught against any : that your father also, which is in heaven may forgive you your trespasses.

11. Render into OE.

Ith Iesus gath du izai : Jet faurthis sada wairthan barna. unte ni goth ist niman hlaib barne jah wairpan hundam. Ith si audhof imma jah gath du imma : jai frauja ; jah auk hundos undaro biuda matjard af drauh-snom barne.

B.

1. Give an account of the laws of (a) word-stress ; (b) syllabic stress ; in OE. What light is thrown upon them by the following forms : *aefpunga, oþgan, andgiet, andswarian, gamol, wipercyr* ?

2. Discuss and illustrate the phenomena of gemination in OE. Under what conditions was it followed by simplification ?

3. Give an account of the vowel-sounds of the Northumbrian dialect, in their relation to the Wessex dialect.

4. Give a succinct account of the phenomena included under the name of the 'First Sound-shifting !' Explain in connexion with them the forms (a) OE. *cast*, (b) *hoppian* where the *t* and *p* respectively are pre-Germanic.

5. Illustrate the several Ablaut-series from the stem-forms of OE. substantives.

6. Write down all the stem-forms. In Gothic and OE., of the Gothic verbs : *sinthan, giban, slahan, sokjan* explaining the relation between the corresponding forms in each case.

7. Trace the history of the endings *-t, -e, -est*. in the 2nd pers. sg. pret. of OE.

8. Explain the formation of the following words : OE. *egosa, recels, onaclet, sped, haos, forst, mægen*.

9. Specify and discuss the tests which have been laid down for the Scandinavian element of the English vocabulary.

10. Give the stem-forms of a single typical verb in each of the seven classes of strong verbs in OE.. Chaucer and Living English, explain in each case the phonetic and other changes concerned.

11. Show the importance of the second Lautverschiebung for the classification of the German dialects.

COMPARATIVE PHILOLOGY.

FOURTH PAPER.

EPIGRAPHY AND PALÆOGRAPHY.

Examiner—MAHAMAHOPADHYAY HARĀPRASAD SASTRI, M.A.

1. Describe from epigraphic sources the extent of the Empire either of Asoka or of the Kusans.

2. Show the difference between the Asoka and the Kuṣāna alphabets or between the Kuṣāna and the Gupta alphabets by drawings illustrative of typical letters.

3. Examine Bühler's theory of the origin of the Kharoṣṭhi alphabet in the light of subsequent researches.

4. What great historical truths can be deduced by reading the short inscriptions at Sarchi, at Barhaut and at Mathura.

Or.

What are the historical results of the latest discoveries at Benares ?

5. What is the bearing of the following inscriptions on Indian History :—

(1) The Bahluka inscription of Aśoka.

(2) Rudradāma inscription at Giniar.

(3) Nasik inscription of Usavadata.

(4) Mandasore inscription of Jasodharma Deva ?

6. What is the position of Pali or of the Jaina Prakrit among the Sanskrit languages ? It is sometimes called Magadhi. What connection has it with the language of Magadha and of what period ?

7. State the theory that Sanskrit or the Dramatic Prakrit is a forgery and relate it.

8. In what language do you think the Asoka inscriptions are composed, and account for the variety of forms of the same words used in the same edicts in different places.

Or.

Account for the promiscuous use of Sanskrit and Pali forms in some of the Ksatrapa inscriptions.

9. What is the Prakrita of the Paisachi ? What are its peculiarities ? What books are written in it ?

Explain the Karikā with illustrations :—

सुमित्रपुत्रहलिकुनराणां कालहलचक्षरकर्तृयमहा च ।

व्यत्युमिच्छति शास्त्रकृद्देवां सोऽपि च सिध्यति बाहुलकेन ॥

10. Enumerate the Vedic substitutes of तुम् in Sanskrit and give examples.

Or,

State in what case a *P* is inserted between the root and the causal in Sanskrit, in Pali and in the Prakrits.

11. In what languages are any three of the following extracts written, and give the peculiar features of the history of these languages. .

(1) “अमी हि ऋषा निरिता स उच्चा
नक्तं ददृशे कौहचिद्विषुः” ।

(2) सुकितिमतिणं सपुतदलनं .
इयं शलिलनिधानं भगवतो बुधस ।

(3) बहु हि प्रागे हि महौ संवृता
अणू हि स्थले हि च मध्ये हि च ।
बुद्धो यदा गच्छति भूत संस्तृते
व्यथा ततो उपपद्यति आक्रमे ॥

(4) चत्वारि लीकपालाः ससेत्यक्तास्ते तव प्रतीक्षन्ते ।
दास्याम चतुरिपात्रां बोधिध्वजं पूर्णमनसस्य ॥

(5) काया तरुवरपञ्चविडाल
चञ्चलचौये पङ्क्तो काल ।

निरुत्करि महासुखपदिमाण
लुप्तमनह गुरु पुच्छिय जान ॥

(6) लोअहे गद्य समुठ्वहइ परमथपविन ।
कोटिह माह एक जत होइ निरखुन लीन ॥

